INDEPENDENT OFFICES APPROPRIATIONS, 1953

HEARINGS

BEFORE THE

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS UNITED STATES SENATE

EIGHTY-SECOND CONGRESS

SECOND SESSION

ON

H. R. 7072

MAKING APPROPRIATIONS FOR THE EXECUTIVE OFFICE AND SUNDRY INDEPENDENT EXECUTIVE BUREAUS, BOARDS, COMMISSIONS, CORPORATIONS, AGENCIES, AND OFFICES, FOR THE FISCAL YEAR ENDING JUNE 30, 1953, AND FOR OTHER PURPOSES

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INDEPENDENT OFFICES APPROPRIATIONS FOR 1953

MONDAY, FEBRUARY 18, 1952

UNITED STATES SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D. C.

The subcommittee met at 10 a. m., pursuant to call, in room F–82, the Capitol, Hon. Burnet R. Maybank (chairman of the subcommittee) presiding.

Present: Senators Maybank, Ellender, Saltonstall, Ferguson, Thye, and McMahon.

ATOMIC ENERGY COMMISSION

SALARIES AND EXPENSES

STATEMENTS OF GORDON DEAN, CHAIRMAN; HENRY D. SMYTH, COMMISSIONER; THOMAS E. MURRAY, COMMISSIONER; T. KEITH GLENNAN, COMMISSIONER; M. W. BOYER, MANAGER; WALTER J. WILLIAMS, DEPUTY GENERAL MANAGER; THOMAS F. FARRELL, ASSISTANT GENERAL MANAGER; EVERETT L. HOLLIS, GENERAL COUNSEL; JESSE C. JOHNSON, DIRECTOR, DIVISION OF RAW MATERIALS; R. W. COOK, DIRECTOR, DIVISION OF PRODUCTION; CARROLL A. TOWNE, DIVISION OF PRODUCTION; COL. K. E. FIELDS, DIRECTOR, DIVISION OF MILITARY APPLICATION; CARROLL L. TYLER, MANAGER, SANTA FE OPERATIONS OFFICE; LAWRENCE R. HAFSTAD, DIRECTOR, DIVISION OF REACTOR DEVELOPMENT; EDWARD J. BLOCH, DIRECTOR, DIVISION OF CONSTRUCTION AND SUPPLY; GEORGE C. TAYLOR, DIVISION OF CONSTRUCTION AND SUPPLY; THOMAS H. JOHNSON, DIRECTOR, DIVISION OF RESEARCH; DR. SHIELDS WARREN, DIRECTOR, DIVISION OF BIOLOGY AND MEDICINE; FLETCHER C. WALLER, DIRECTOR, DIVISION OF ORGANIZATION AND PERSONNEL; MORSE SALISBURY, DIRECTOR, DIVISION OF INFORMATION SERVICES; LINDSLEY H. NOBLE, CONTROLLER; F. J. McCARTHY, Jr., ASSISTANT CONTROLLER FOR BUDGETS.

1953 BUDGET PROGRAM

Senator MAYBANK. The subcommittee will come to order.

In accordance with the recommendation which has been made and if there is no objection from the other members of the subcommittee, we will ask that the reporter leave the room and we shall proceed in executive session.

(The reporter was excused and the subcommittee proceeded in executive session.)

Senator MAYBANK. Now, what is the amount for new obligations in 1953 you are requesting here?

Mr. DEAN. The amount is $1,255,000,000.

Senator MAYBANK. It is $1,255,000,000 and we understand you are going to come up for a supplemental, according to the newspaper reports, for some $5 billion plus to be spent over a period of years. How much would be spent this year?

Mr. DEAN. Expenditures from the supplemental would be very small in 1952. The 1953 expenditures from the supplemental program will amount to in excess of $600 million.

Senator MAYBANK. So that in the neighborhood of $1.7 billion will be spent in fiscal 1952 on your currently authorized program and you expect to request an authorization for some $4 to $5 billion additional.

Mr. DEAN. A very small amount, Senator, would be spent on the expansion program in fiscal 1952, but we need authorization from the Congress to get started.

Could you break the 1953 budget down, Mr. McCarthy?

Mr. MCCARTHY. Yes. I can summarize the information which appears on pages 1 through 15 of the budget justifications.

Senator MAYBANK. I would like the record to show that we have had an executive session here for an hour and 10 minutes discussing some of the classified aspects of the atomic energy program, and for that reason the record will not be very complete.

LIQUIDATION OF CONTRACT AUTHORITY

Mr. MCCARTHY. Mr. Chairman, in addition to the $1,255,000,000 which we are requesting for the fiscal year 1953, representing new obligations to be incurred in 1953, the budget also requests $57 million for the liquidation in 1953 of prior-year contract authority granted the Commission.

Senator MAYBANK. You say you are going to go through pages 1 to 15?

Mr. MCCARTHY. I will just highlight this.

Senator MAYBANK. If there is nothing secret, I would like those pages to be made a part of the record so those who are not on the committee will understand the figures. Without objection we will make part of the record, pages 1 through 15.

(The pages referred to are as follows:)

BUDGET ESTIMATES FOR FISCAL YEAR 1953

GENERAL STATEMENT

Appropriation requested

An appropriation of $1,312,000,000 is required to provide for the 1953 estimates. The amount requested for new obligations in 1953 is $1,255,000,000. The remaining $57,000,000 is required to liquidate obligations incurred under contract authority in prior years. The appropriation of this amount will practically complete the financing of all contract authority amounting to $1,566,224,628 granted the Commission for the fiscal years 1948 through 1951. No new contractual authority was granted for 1952 and none is being requested for 1953.

Comparison of estimated obligations

Actual obligations in 1951 and estimated obligations for 1952 and 1953, shown separately for operations and additions to plant and equipment, compare as follows:

[In milions]

	Actual, fiscal year 1951	Estimate, fiscal year 1952	Estimate, fiscal year 1953
Operations	$467.7	$722.4	[1] $802.7
Plant and equipment	1,457.5	585.6	453.5
Total	1,925.2	1,308.0	[1] 1,256.2

[1] Includes an estimated $1.2 million of reimbursable work for other agencies, for which an appropriation is not requested.

Cost-performance presentation

The Commission's budget for fiscal year 1953 is the third annual budget to be presented on a cost-performance basis. The funds required for operations and for plant and equipment are presented separately and in a different manner.

Operations.—For each of the several programs into which the Commission's activities have been grouped, the funds required for operations are expressed in terms of incurred costs. These costs include the expense of labor, materials, and services actually to be consumed during the year for each operating activity. Not included in the budgeted costs are the depreciation expenses applicable to the various fixed assets used in each activity, although depreciation expenses and reserves are recorded in the Commission's accounts and shown in its financial statements.

The amount of obligations to be incurred for operations has been determined by adding to or deducting from the total of the operating costs estimated for each program, the estimated costs of reimbursable work and the estimated net increases or decreases, respectively, in inventories, cash working funds, unliquidated obligations, and transfers to or from other agencies.

Plant and equipment.—The obligational authority required during 1953 for plant and equipment has been estimated in terms of the amounts of contracts and orders to be placed during the year for this purpose. The costs to be incurred during the year for plant and equipment are also shown, as well as the resulting changes in working capital and unliquidated obligations for this work. The appropriation amount requested for plant and equipment, however, is based directly on the requirement for new obligational authority, and does not depend upon the rate at which construction costs are expected to be incurred during the year.

SUMMARY OF OPERATING PROGRAMS

The operating activities carried on by the Commission and its contractors are grouped in terms of five major programs and two subsidiary or supporting programs. Set forth below is a brief analysis of the estimated costs to be incurred for each of these operating programs, and of the other factors which determine the total obligational authority required for operations. More detailed information is provided in the justifications set forth in subsequent pages.

Operating costs

Total operating costs in 1953 are estimated as $767.8 million, compared with $615.0 million expected to be incurred in 1952, and $400.3 million actually incurred in 1951.

1. *Source and fissionable materials program.*—The production of source and fissionable materials begins with the exploration for and procurement of uranium ores and concentrates. These are refined into feed materials for the gaseous diffusion plants at Oak Ridge, which produce uranium 235, and for the reactors at Hanford, which produce plutonium. The amounts of these fissionable materials produced are the limiting factor in the production of atomic weapons. Development work at each manufacturing step is carried out with the aim of improving efficiency and product quality in both existing plants and those under construction.

The operating costs in 1953 for this program are estimated at $341.5 million, compared with $254.2 million in 1952. Increased quantities of both raw materials and fissionable materials will be procured or produced in 1953.

2. *Weapons program.*—The weapons program is concerned with the production of atomic weapons and their maintenance in a state of constant readiness. To this end, research, development, and testing are also carried on in order to improve existing weapon types, devise new types, and enlarge the body of fundamental scientific knowledge related to the use of nuclear energy in weapons.

Operating costs of the weapons program are estimated at $228.0 million in 1953, compared with $200.6 million estimated for 1952. Increased numbers of weapons will be produced in 1953; weapon-testing activities will be continued; and the personnel strength of the principal weapons laboratories at Los Alamos and Sandia, in New Mexico, will be higher than in 1952.

3. *Reactor development program.*—Major emphasis in reactor development is directed to increasing the output and efficiency of reactors for the production of fissionable material, including both existing reactors and those under construction; developing reactors of radically changed design for this same purpose; and providing prototype reactors for the propulsion submarines and military aircraft. These efforts contribute to the longer-range objective of economical production of electric power. Extensive research is also devoted to general problems of reactor design, such as development of new materials, shielding, and systems of heat transfer and chemical processing. While maximum use is made of Commission-owned facilities, in 1953 more work will be carried out by industrial contractors in their own plants and laboratories.

Operating costs for reactor development in 1953 are estimated as $92.4 million, compared with $65.2 million estimated for 1952.

4. *Physical research program.*—Research in the physical sciences of physics, chemistry, metallurgy, and mathematics seeks to provide fundamental knowledge and understanding as a basis for future atomic energy achievement. This research is carried on in the Commission's laboratories and to an increasing degree is supported at numerous universities and colleges throughout the United States.

Operating costs in 1953 for physical research are estimated as $43.1 million, compared with $37.3 million estimated for 1952. Much of the increase represents the cost of nuclear studies to be undertaken with new large-scale research instruments.

5. *Biology and medicine program.*—The Commission's primary concern in the field of biology and medicine is to determine the nature and extent of radiation and other atomic energy hazards; to prescribe adequate protective measures for the Commission's operations; and to provide relevant information to its contractors, the Federal Civil Defense Administration, and the Department of Defense. Research on problems specifically related to these responsibilities and on the whole broad problem of the reactions of living organisms to ionizing radiation is carried on in Commission laboratories and supported at a large number of universities, colleges, and hospitals. Also supported or encouraged is the application of radioactive materials to biological and agricultural research and to the study and treatment of cancer.

The estimated operating costs to be incurred in 1953 for biology and medicine are $24.6 million, compared with costs of $23.3 million expected in 1952.

6. *Community operations.*—The communities of Los Alamos, N. Mex., Oak Ridge, Tenn., and Richland, Wash., and certain housing at other locations, are operated to provide essential support for the weapons and source and fissionable materials programs. The costs of operating and maintaining the housing, commercial facilities, public utilities, schools, and other municipal services are largely offset by revenues.

The estimated net costs to be incurred in 1953 for community operations are $2.8 million, compared with $3.0 million in 1952.

7. *Program direction and administration.*—The salaries and other expenses of Commission personnel engaged in general management, executive direction, and technical supervision of program operations, the negotiation and administration of contracts, and other related administrative activities, are grouped together under the general heading of program direction and administration. The salaries and other expenses of Commission personnel engaged in nonadministrative activities, such as safeguarding shipments of fissionable materials and property, and providing police and fire protection at plants and communities, are included under the programs to which their work relates. The Commission administers its widely scattered operations through the Washington headquarters office, eight operations offices, and more than a score of local area offices.

The estimated costs of $35.4 million to be incurred in 1953 for program direction and administration compare with costs of $31.4 million estimated for 1952.

8. *Other obligational requirements for operations.*—In addition to the operating costs summarized above, obligational requirements are also affected by the following:

(*a*) Costs of reimbursable work to be performed for other agencies are expected to amount to $1.2 million in 1953, the same amount as in 1951 and 1952. Although these reimbursable costs increase the total obligations to be incurred, they are offset by reimbursements in the same amount in arriving at the appropriation request.

(*b*) Stores inventories must be increased $3.2 million in 1953 to supply the expanding requirements of the operating programs. In 1952 they will show an estimated increase of $6.0 million compared with a decrease of $1.5 million in 1951. The total value of stores inventories at the end of 1953 will be $85,378,556.

(*c*) Special reactor materials being stockpiled for future use are expected to increase $5.6 million in 1953, compared with an estimated decrease of $0.8 million in 1952 and an increase of $6.4 million in 1951. The total value of such inventories at the end of 1953 will be $18,292,504.

(*d*) Other special materials, being stockpiled for future use for purposes other than construction of reactors, will increase in 1953 by an estimated $2.0 million, the same as the estimated increase for 1952. The increase in 1951 was $0.2 million. The total value of these special materials inventories at the end of 1953 will be $6,714,532.

(*e*) Working capital advances to operating contractors will increase by an estimated $0.7 million in 1953. An estimated decrease of $18.9 million is expected in 1952, compared with an increase of $10.7 million in 1951.

(*f*) Unliquidated obligations for operations will increase by an estimated $22.2 million in 1953. The estimated increase for 1952 is $118.2 million and the actual increase in 1951 was $50.4 million. This continued growth in unliquidated obligations reflects the increasing annual cost of the Commission's production and research programs and the fact that most of the contracts for operation of Commission plants and laboratories are executed in the year preceding that in which the costs will be incurred. The cost of the following year's operations under such contracts is therefore included in the unliquidated obligations outstanding at the close of the fiscal year.

SUMMARY OF PLANT AND EQUIPMENT PROGRAMS

Plant and equipment obligations

The estimated obligational authority required in 1953 for plant and equipment is $453.5 million. Obligations in 1952 for this purpose are expected to be $585.6 million, compared with actual obligations in 1951 of $1,457.5 million.

The obligational authority required for each of the plant and equipment programs is summarized below.

1. *Source and fissionable materials facilities.*—Obligational authority of $311.4 million is requested for source and fissionable materials facilities in 1953. An estimated $360 million will be obligated for this purpose in 1952, compared with actual obligations of $1,247.5 million in 1951.

The $284.2 million requirement for the Savannah River plant project represents more than half of the entire request for plant and equipment. Appropriation of this amount would bring to $1,180 million the obligational authority granted for this over-all project. The remaining $27.2 million for source and fissionable materials facilities is required for numerous projects which will supplement or improve major facilities already in use or under construction, mainly at Hanford, Wash., Oak Ridge, Tenn., and Fernald, Ohio.

2. *Weapons facilities.*—New obligational authority of $55 million is required in 1953 for weapons facilities. Obligations of $114.3 million are expected to be incurred in 1952, compared with actual obligations of $103.6 million incurred for weapons facilities in 1951.

Most of the $55 million request is required for projects initiated at numerous sites in prior years. The major new project to be undertaken is a new building for the technical area at Los Alamos, for which $6.9 million is required.

3. *Reactor development facilities.*—The obligational authority required in 1953 for reactor development facilities is $44.1 million. In 1952 it is expected that $50.1 million will be obligated for this purpose, compared with actual obligations of $52.6 million in 1951.

Approximately $37.1 million of the $44.1 million requested is required for the continuation, initiation, or completion of construction work on a number of experimental and prototype reactors designed to produce fissionable materials

or to provide power for submarine and aircraft propulsion. The remaining $7 million is required for chemical processing facilities and a variety of small projects, principally at the Oak Ridge and Argonne National Laboratories, the Knolls Atomic Power Laboratory, and the reactor testing station in Idaho.

4. *Physical research facilities.*—For physical research facilities obligational authority of $6 million is required in 1953. It is expected that obligations incurred for this purpose during 1952 will amount to $4.9 million; actual obligations of $5.3 million were incurred in 1951.

The request includes $2.7 million for a research reactor and $3.3 million for various improvements and additions to buildings and equipment, principally for the Radiation Laboratory at Berkeley and the Oak Ridge National Laboratory.

5. *Biology and medicine facilities.*—Obligational authority of $0.5 million is requested for biology and medicine facilities in 1953, compared with estimated obligations of $4 million in 1952 and actual obligations of $5.2 million in 1951. The funds are required for improvements at several Commission installations.

6. *Community facilities.*—The requested obligational authority for community facilities amounts to $5.5 million in 1953. It is expected that $16.3 million will be obligated for this purpose in 1952, compared with actual obligations of $11.7 million in 1951.

The requested funds are for additions to three elementary school buildings at Richland, rehabilitation of temporary housing units at Oak Ridge, and miscellaneous capital improvements at these communities and Los Alamos.

7. *Administrative facilities.*—No funds are requested for 1953 for administrative facilities.

8. *Equipment not included in construction projects.*—The requested obligational authority for equipment not included in construction projects amounts to $31 million in 1953. Obligations of $35.9 million are expected to be incurred for this purpose during 1952, and $31.4 million was actually obligated in 1951.

Approximately $17.3 million is required for laboratory equipment, $6.3 million for process equipment, $2.8 million for shop equipment, and $4.6 million for equipment of eight other general types.

Plant and equipment costs

Plant and equipment costs will continue to be incurred at a high rate in 1953, the anticipated costs to be incurred during the year amounting to $976.4 million. Construction working capital and net unliquidated obligations are expected to decrease, to the extent that work completed during 1953 exceeds the amount of obligational authority being requested for that year.

These relationships are shown in the following tabulation:

[In millions]

	Actual, fiscal year 1951	Estimate, fiscal year 1952	Estimate, fiscal year 1953
Plant and equipment costs	$458.4	$1,100.7	$976.4
Increase or decrease (−) in—			
Construction working capital	47.8	−3.7	−5.7
Construction unliquidated obligations	951.3	−511.4	−517.2
Plant and equipment obligations	1,457.5	585.6	453.5

SALARIES AND EXPENSES, ATOMIC ENERGY COMMISSION

Comparative summary of appropriations and appropriation estimates

	Cash appropriation
Appropriation for 1952: Presently available	$1,605,897,750
Estimate of appropriations for 1953	1,312,000,000
Decrease, 1953 estimate over 1952	293,897,750

Comparative summary of obligations and appropriations

	Actual fiscal year 1951	Estimate fiscal year 1952	Estimate fiscal year 1953
Obligations	$1, 925, 204, 176	$1, 307, 967, 639	$1, 256, 200, 000
Less:			
New contract authority	−300, 150, 000	0	0
Prior year balance available	−57, 271, 317	−40, 993, 089	0
Reimbursements	−1, 186, 248	−1, 200, 000	−1, 200, 000
Plus:			
Cash to liquidate previous contract authority	414, 000, 000	340, 000, 000	57, 000, 000
Transfers to other Government agencies	0	123, 200	0
Unobligated balance:			
Reappropriated for subsequent year	40, 993, 089	0	0
Estimated savings (contract authority)	10, 553, 300	0	0
Appropriation	2, 032, 143, 000	1, 605, 897, 750	1, 312, 000, 000

Obligational authority related to obligations and expenditures (excluding trust accounts)

	Estimate, fiscal year 1952	Estimate, fiscal year 1953
General and special accounts (excluding working funds):		
Current appropriations:		
Presently available	$1, 606, 022, 750	$1, 312, 125, 000
Contract authorization	0	0
Unobligated balances available	41, 037, 352	0
Reimbursements from other government agencies	1, 200, 000	1, 200, 000
Payments available from non-Federal sources	0	0
Total available	1, 648, 260, 102	1, 313, 325, 000
Less:		
Transfers to other Government agencies	123, 200	0
Cash required to liquidate prior year contract authorization	340, 000, 000	57, 000, 000
Total available for obligation	1, 308, 136, 902	1, 256, 325, 000
Less unobligated balances at end of year:		
To be carried forward in continuing accounts	0	0
To lapse upon closing of accounts	0	0
Total obligations incurred	1, 308, 136, 902	1, 256, 325, 000
Less collections treated as deductions from expenditures	1, 200, 000	1, 200, 000
Net obligations for the year	1, 306, 936, 902	1, 255, 125, 000
Obligations outstanding at start of year	1, 796, 270, 074	1, 397, 975, 799
Net obligations to be accounted for	3, 103, 206, 976	2, 653, 100, 799
Less obligations outstanding at end of year	1, 402, 898, 008	902, 975, 799
Net expenditures, general and special accounts (excluding working funds	1, 700, 308, 968	1, 750, 125, 000
Working fund advances to other agencies:		
Unobligated balances available	0	0
Net obligations for the year	0	0
Obligations outstanding at start of year	44, 298, 278	44, 298, 278
Net obligations to be accounted for	44, 298, 278	44, 298, 278
Less obligations outstanding at end of year	44, 298, 278	44, 298, 278
Net expenditures, working funds	0	0
Net expenditures, general and special accounts, including working funds	1, 700, 308, 968	1, 750, 125, 000

Analysis of contract authority and cash required to liquidate contract authority

	Actual, fiscal year 1951	Estimate, fiscal year 1952	Estimate, fiscal year 1953
Prior year contract authority brought forward	$522,038,923	$397,635,623	$57,635,623
Less: Deobligation of prior year contract authority	10,553,300	0	0
Net	511,485,623	397,635,623	57,635,623
Less: Cash required to liquidate contract authority included in appropriation	414,000,000	340,000,000	57,000,000
Balance of prior year contract authority unfinanced at close of year	97,485,623	57,635,623	635,623
Add: New contract authority obligated during the year	300,150,000	0	0
Total unfinanced contract authority at end of year	397,635,623	57,635,623	635,623

Comparative summary of accrued operating costs by program reconciled to obligations and plant and equipment obligations

	Actual fiscal year 1951	Estimate fiscal year 1952	Estimate fiscal year 1953
Operations (accrued-cost basis):			
Source and fissionable materials	$138,272,654	$254,221,500	$341,500,000
Weapons	141,515,021	200,647,900	228,000,000
Reactor development	40,572,011	65,204,000	92,400,000
Physical research	31,488,918	37,265,600	43,100,000
Biology and medicine	20,615,908	23,285,500	24,600,000
Community operations	4,037,086	2,979,900	2,800,000
Program direction and administration	23,800,838	31,366,974	35,400,000
Total operating costs	400,302,436	614,971,374	767,800,000
Costs of reimbursable work performed	1,186,248	1,200,000	1,200,000
Increase or decrease (−) in:			
Stores inventories	−1,451,253	5,950,372	3,202,000
Special reactor materials	6,396,657	−786,396	5,561,000
Other special materials	243,076	2,019,895	2,037,000
Working capital	10,685,960	−18,876,223	700,000
Unliquidated obligations	50,385,424	118,172,960	22,200,000
Transfers to or from (−) other agencies	−36,073	−263,000	0
Total obligations for operations	467,712,475	722,388,982	802,700,000
Plant and equipment (obligations):			
Source and fissionable materials facilities	1,247,494,197	359,962,271	311,400,000
Weapons facilities	103,565,791	114,314,416	55,000,000
Reactor development facilities	52,556,879	50,147,317	44,100,000
Physical research facilities	5,341,568	4,894,115	5,985,000
Biology and medicine facilities	5,184,282	4,020,900	515,000
Community facilities	11,725,048	16,276,022	5,500,000
Administrative facilities	200,776	48,984	0
Equipment not included in construction projects	31,423,160	35,914,632	31,000,000
Total obligations for plant and equipment	1,457,491,701	585,578,657	453,500,000
Grand total obligations	1,925,204,176	1,307,967,639	1,256,200,000

Comparative summary of accrued costs for plant and equipment by pogram reconciled to obligations

	Actual, fiscal year 1951	Estimate, fiscal year 1952	Estimate, fiscal year 1953
Plant and equipment (accrued cost basis):			
Source and fissionable materials facilities	$276,114,563	$817,000,000	$770,520,000
Weapons facilities	56,000,573	145,500,000	89,360,000
Reactor development facilities	54,820,304	48,500,000	67,000,000
Physical research facilities	16,140,640	15,600,000	7,200,000
Biology and medicine facilities	3,909,208	10,700,000	2,000,000
Community facilities	24,042,453	24,500,000	6,340,000
Administrative facilities	13,989	410,000	9,000
Equipment not included in construction projects	27,380,131	38,441,012	34,014,400
Total costs	458,421,861	1,100,651,012	976,443,400
Increase or decrease (−) in:			
Construction working capital	47,821,200	−3,667,034	−5,743,400
Construction unliquidated obligations	951,248,640	−511,405,321	−517,200,000
Total obligations for plant and equipment	1,457,491,701	585,578,657	453,500,000

Comparative statement of obligations by object class

		Actual, fiscal year 1951	Estimate, fiscal year 1952	Estimate, fiscal year 1953	Increase or decrease (−) 1953 over 1952
01	Personal services	$24,876,803	$33,225,000	$38,635,599	$5,410,599
02	Travel	1,680,051	3,059,299	3,345,927	286,628
03	Transportation of things	2,532,697	3,061,719	1,407,499	−1,654,220
04	Communication services	1,769,320	1,852,748	2,134,970	282,222
05	Rents and utility services	43,261,821	70,490,547	55,616,911	−14,873,636
06	Printing and reproduction	280,841	411,403	399,920	−11,483
07	Other contractual services	354,867,820	549,880,806	593,664,546	43,783,740
08	Supplies and materials	37,614,898	59,990,391	107,077,732	47,087,341
09	Equipment	31,423,160	35,914,632	31,000,000	−4,914,632
10	Lands and structures	1,426,068,541	549,664,025	422,500,000	−127,164,025
11	Grants, subsidies, and contributions	816,162	226,450	200,000	−26,450
13	Refunds, awards, and indemnities	1,111	10,500	10,500	0
15	Taxes and assessments	10,951	80,119	106,396	26,277
	Unvouchered	0	100,000	100,000	0
	Total obligations	1,925,204,176	1,307,967,639	1,256,200,000	−51,767,639

EXPLANATION OF PROPOSED CHANGES IN APPROPRIATION LANGUAGE

Changes proposed in the appropriation language for the fiscal year 1953 and the reasons therefor are as follows:

1. *Amendment to limitation of purchase of motor vehicles.*—This change provides for purchase of 450 passenger-carrying vehicles of which 376 are for replacement only. This compares with the limitation in fiscal year 1952 for purchase of 375 vehicles of which 215 were for replacement only. The replacement of 376 passenger-carrying vehicles is requested in fiscal year 1953 because these machines will no longer be economical to operate; 106 of the 123 additional vehicles are required in connection with the initiation of operations at Savannah River, with the additional 17 passenger-carrying vehicles required for expansion of operations at other locations throughout the country.

2. *Amendment of appropriation amount and deletion of dollar limitation on personal services.*—The limitation of $25,135,000 on the amount which could be used for personal services as contained in the regular 1952 appropriation act was amended by the Supplemental Appropriation Act, 1952, to $30,400,000. The removal of the limitation on personal services is requested on the grounds that—

(*a*) It is unduly restrictive to effective management of the atomic energy program. With the rapid expansion of the construction program and the efforts to get plants in operation as soon as possible we are not always able to foresee adequately our personnel requirements which could serve as the basis for establishing a personnel limitation.

(*b*) Such a limitation on personnel funds would in effect prevent transfer to direct AEC operation of functions presently performed by contractor person-

nel even in cases where for reasons of economy or otherwise the Commission concluded that the work could best be performed by AEC personnel.

3. *Omission of reference to the Jensen amendment (sec. 605 of the Independent Offices Appropriation Act, 1952).*—The omission of the reference to the Jensen amendment is based on the fact that it is not permanent legislation, the expiration date being June 30, 1952. Also, since the deletion is being recommended by the President for 1953 it is not necessary that exemption be specifically requested for future years.

CONTRACT AUTHORITY TERMINATION

Mr. McCarthy. The $57 million requested for the liquidation of contract authority will complete the financing of all prior year contract authority granted the Commission.

Nineteen hundred and fifty-one was the last year in which contract authority was included in the appropriation for the Commission and and with this $57 million we will completely liquidate all outstanding contract authority.

I would also like to call the committee's attention to the preparation of the budget justifications this year. We have shown on the white sheets all unclassified information and then on the green sheets we show the classified material which analyzes in greater detail the individual programs. In past years we have had different volumes for the classified and unclassified justifications, and the committee has had to move from one volume to the other, in order to cover the testimony on each program. We felt it would be helpful to the committee to have the unclassified and classified justifications for each program on consecutive pages within the same book. So the green pages contain the classified material in support of the budget.

BREAKDOWN OF TOTAL ESTIMATES

Of the new obligations of $1,255,000,000 for 1953, $802.7 million covers the operations portion of the budget which is included in volumes 1 and 2 of the justifications.

The justifications for plant and equipment are contained in volume 3 and for which $453.5 million is requested for 1953.

On page 12 of volume 1 we show the breakdown of our operating costs by program for each of the fiscal years 1951, 1952, and 1953 and the adjusting items for operations, such as the increases in inventories for stores, special reactor materials, and other special materials, together with the increase in working capital and unliquidated obligations, coming down to the amount of obligations required for operations.

Following that, we show the obligations by program for the fiscal year 1953 for plant and equipment.

Senator Maybank. On what page is that?

Mr. McCarthy. That is on page 12.

I might point out for the benefit of the committee the ratio, percentagewise, of the cost for each program in the operations budget, to the total operating cost for each of the fiscal years involved. First is the Source and Fissionable Materials program. In 1951 costs for that program represented 34.5 percent of our total operating budget, in 1952 it comes to 41.3 percent, and in 1953 it represents 44.5 percent, or almost half of our entire operating budget.

The operating costs of the weapons program in 1951 represented 35.4 percent of our operating budget, in 1952 it was 32.6 percent, and in 1953 it is 29.7 percent.

Senator MAYBANK. You do not have those on any of these pages, do you?

Mr. MCCARTHY. No, sir; I do not. I am talking to the top portion of page 12—the operating costs for each of our programs.

The reactor development program in 1951 represented 10.1 percent of our total operating cost; in 1952 it rises to 10.6 percent; and in 1953 it represents 12 percent of our total operations.

The physical research program in 1951 was 7.9 percent of our total operating costs.

Senator MAYBANK. Is somebody going to speak on each of these?

Mr. MCCARTHY. The director for each of these programs will talk to the actual dollars, Mr. Chairman. I am just pointing out the relationship of each program to the total operating program.

In 1952 the physical research program is 6.1 percent of our total operating program and in 1953 it will drop off to 5.6 percent.

The biology and medicine program in 1951 represented 5.2 percent of our total operating costs, in 1952 it represents 3.8 percent, and in 1953 it drops down to 3.2 percent.

Community operations in 1951 was 1 percent of our total operating costs, in 1952 it is one-half of 1 percent; and in 1953 it is 0.4 percent.

Program direction and administration, which covers the direct AEC cost, in 1951 was 5.9 percent of our operating budget, in 1952 it is 5.1 percent, and in 1953 it is 4.6 percent.

The staff of the Commission is available to talk to each of the operating programs and the related plant equipment budget and we have prepared a summary listing to show the pages and the volume of the budget involved in each of the programs, Mr. Chairman.

Senator MAYBANK. Without objection, that will be made a part of the record.

(The information referred to is as follows:)

Schedule of hearings before Independent Offices Subcommittee, Senate Appropriations Committee

	Pages of justification
Opening statement: Gordon Dean, Chairman, Atomic Energy Commission	
Summary of appropriation request (vol. I)	1–15
F. J. McCarthy, Assistant Controller for Budget.	
Raw materials program:	
Operating costs (vol. I)	24–32
Construction (1 item) (vol. III)	741
Jesse C. Johnson, Director, Division of Raw Materials.	
Fissionable materials program:	
Operating costs (vol. I)	33–110
Construction (vol. III)	741–790
R. W. Cook, Director, Division of Production.	
Weapons program:	
Operating costs (vol. I)	111–170
Construction (vol. III)	791–815
Col. K. E. Fields, United States Army, Director, Division of Military Application.	
Reactor development program:	
Operating costs (vol. I)	171–250
Construction (vol. III)	816–850
Lawrence R. Hafstad, Director, Division of Reactor Development.	
Physical research program:	
Operating costs (vol. I)	251–330
Construction (vol. III)	851–870
Thomas H. Johnson, Director, Division of Research.	
Biology and medicine program:	
Operating costs (vol. I)	331–450
Construction (vol. III)	871–880
Dr. Shields Warren, Director, Division of Biology and Medicine.	
Community program:	
Operating costs (vol. II)	451–520
Construction (vol. III)	881–915
Carroll A. Towne, Chief, Community Operations Branch, Division of Production.	
Program direction and administration: Operating costs (vol. II)	521–645
Fletcher C. Waller, Director, Division of Organization and Personnel.	
Stores inventory (vol. II)	616–650
Special materials inventory (vol. II)	666–676
Equipment (vol. III)	917–1036
Edward J. Bloch, Director, Division of Construction and Supply.	
George C. Taylor, Assistant Director for Supply, Division of Construction and Supply.	
Special reactor materials inventory (vol. II)	651–665
John C. Robinson, Assistant Director, Division of Engineering.	
Changes in operating working capital (vol. II)	677–705
Changes in unliquidated obligations (vol. II)	706–740
Lindsley H. Noble, Controller.	
F. J. McCarthy, Assistant Controller for Budget.	

PLANT AND EQUIPMENT

Senator ELLENDER. You are now talking about plant and equipment?

Mr. MCCARTHY. Both operations and the plant and equipment budget.

Senator ELLENDER. Some time ago I noticed quite an addition to the cost of equipment going into the Savannah plant. above the original estimates. Will you go into that for us a bit?

Mr. DEAN. Would you like me to answer that? Mr. Cook can then give you detailed figures.

Our original estimate for Savannah River was made at the time when the designs were not even begun on the type of facilities that were to go there and even before the place had been selected. So they were very rough and they were on the order at that time of something like $600 million.

It soon became apparent that the cost would be in excess of $600 million. Even today the Savannah River plant is only 44 percent designed.

Senator ELLENDER. What are your most recent estimates?

Mr. DEAN. The most recent estimate is $1,180,000,000.

Senator ELLENDER. In contrast to $600 million when you started?

Mr. DEAN. Yes. But I would say again that the original estimate was in no sense firm because we had nothing to estimate on except to take some old figures from a facility which had previously been built, and which was quite unlike this, increase it for differences in prices, and come up with some kind of "guesstimate," which is really what it was.

Senator MCMAHON. When you made that so-called guesstimate, did you emphasize enough that it was that, because that has made some trouble for the Commission on public relations?

Mr. DEAN. That is very true. I think the record will show that at the time we indicated what the situation was, that we were quite unsure of it. I expressed a hope—this is all I did when I was asked by the House Appropriation Committee—that we would be able to stay within it.

Senator MAYBANK. I remember very distinctly here you expressed an opinion—you did not use the word "guesstimate"—but said it was merely an estimate and you did not know what it was going to cost. I know that is what you told me. I think Senator O'Mahoney was chairman at that time, but since then I have succeeded him.

SAVANNAH RIVER PROJECT

At this point I should like to place in the record the report on the Savannah River operations taken from the Eleventh Semiannual Report of the Commission to the Congress.

(The report referred to is as follows:)

Savannah River.—By the end of December, the Corps of Engineers had options on more than half of the 1,500 tracts of land to be acquired at the Savannah River site in South Carolina. Payments and closings had been completed on more than one-third of the total number of tracts involved. The total area to be acquired is about 1½ times the area of the city of Chicago.

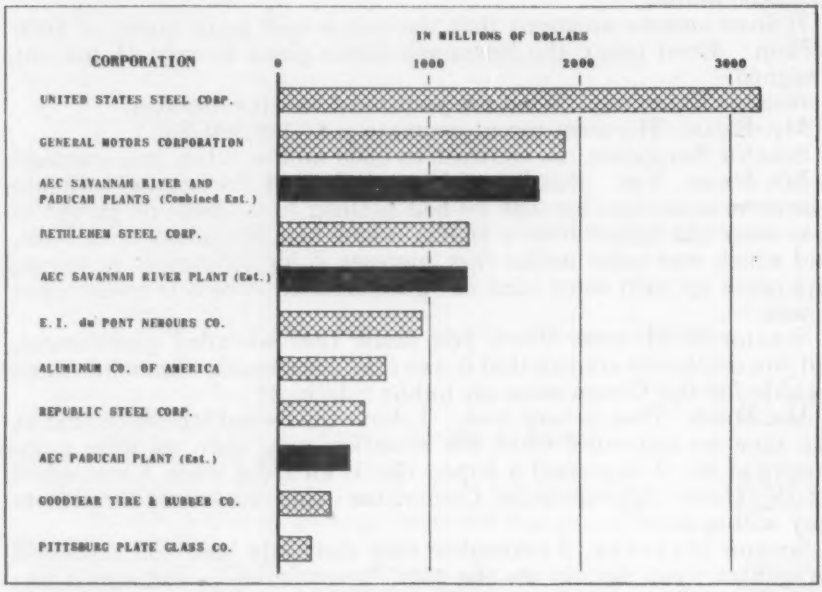
Employment of construction workers increased from 6,600 at the end of June to about 22,000 on December 31, 1951. Preliminary total cost estimates for this project, prepared with design still far from completion, indicated that more than 1.25 billion dollars will be required to pay for design and construction.

Paducah.—Design and construction of the gaseous-diffusion plant at Paducah, Ky., including auxiliary facilities and feed plant, proceeded at a fast pace despite a series of work stoppages during the summer and fall. It is hoped that with favorable weather and equipment deliveries some of the lost time can be made up. This plant, estimated to cost about $473 million, is being constructed by F. H. McGraw & Co. Construction employment averaged 5,200 during June 1951 and exceeded 13,000 before the year ended.

The presently estimated costs of these two major projects are compared to the real estate, plant, and equipment investment of eight major United States cor-

porations in chart No. 1. The magnitude of the two jobs is brought out by the fact that both plants are to be constructed in a relatively short time but involve a total plant investment that a private company would normally accumulate over many years.

COST OF SAVANNAH RIVER AND PADUCAH PLANTS COMPARED WITH INVESTMENT IN REAL ESTATE, PLANT, AND EQUIPMENT OF EIGHT MAJOR INDUSTRIAL CORPORATIONS



Source of corporate data: Balance sheets of corporations for December 31, 1950, as published in Standard and Poor's, 1951 edition.

One year's progress

It has been slightly more than a year since the selections of the Savannah River and Paducah plant sites were announced on November 28, 1950, and December 15, 1950, respectively. The total amount of earth excavated at the two sites by December 31, 1951, would build a solid wall 5 feet wide and 7 feet high reaching from New York to San Francisco. The structural steel erected at Paducah and Savanah River would be enough for another Chrysler Building. A total of 200 miles of roads has been built and 53 miles of underground pipe laid at the two sites. The amount of concrete poured at the two projects is equal to two-thirds of all the concrete in the Bonneville Dam on the Columbia River. One hundred and thirty-three miles of electric-power distribution lines have been strung and 78 miles of railroad completed. The total floor area of temporary office, store, and warehouse space constructed at the two sites is approximately equal to the total rental area in the Empire State Building.

HOUSING AND SERVICES AT NEW PLANTS

The AEC is relying on existing communities to furnish community facilities and services and on private development and financing to supply the housing for in-migrant personnel required for the construction and operation of the Savannah River and Paducah plants. As of the end of 1951, 60 percent of the persons engaged in AEC work at the Savannah River site and 50 percent of the workers at the Paducah site were in-migrant to the area.

Some Federal assistance is available for these areas, both of which have been designated critical defense-housing areas. Government credit restrictions pertaining to housing construction have been suspended and the National Housing Act has been amended to provide liberalized mortgage insurance for defense-housing requirements where critical defense-housing areas have been established.

Federal assistance is also provided to communities in critical defense-housing areas for additional community facilities and services.

Housing.—At Savannah River the in-migrants have been assimilated into the various communities near the project area, chiefly in Augusta, Ga., and North Augusta, Aiken, and Barnwell, S. C. Others are living in about 2,400 privately owned trailers scattered throughout the area. To induce private enterprise to provide and operate housing for construction workers, the du Pont Co. entered into contracts by which it guarantees payment of amounts equivalent to the revenue which normally would be required to amortize the investment in 4,000 family-type and 7,500 single-type temporary housing accommodations. The contract for the family accommodations runs for 5 years, and for the single accommodations for 2 or 3 years at du Pont's option. The Housing and Home Finance Agency programed 3,600 houses to accommodate permanent operating-plant personnel. At the year's end, 1,000 of these programed units were under construction as rental units, together with 250 houses which had been or were being constructed by individuals.

At Paducah about one-half of the in-migrants are living in trailers which they brought with them or purchased upon arrival. Other workers are living in rooms, apartments, and houses in the many communities and rural areas throughout western Kentucky and southern Illinois. While the AEC has depended primarily upon surrounding communities to absorb the influx of workers and their families, it has taken three steps to prevent a delay in the completion of construction or a slow-down of operations due to a lack of housing: Sale of 277 surplus prefabricated housing units located at Oak Ridge to be moved to the Paducah area and held for rent to project workers; authorization for the construction of two 500-man dormitories at the project site, one of which has been completed; and certification of the need for 500 rental-housing units under title VIII of the National Housing Act, as amended.

At both the Savannah River and Paducah plants, workers commute daily from living quarters as far as 60 miles away from the site.

Schools and community facilities.—At the Savannah River site the United States Office of Education approved under the authority of Public Law 815, Eighty-first Congress, second session, 188 temporary classroom facilities in the various communities to serve the children of new families. The first of these classrooms is expected to be in use by March 1952. Augusta, Ga., is using funds placed at its disposal by the United States Office of Education to enlarge its permanent school structures. Funds for permanent buildings for several of the school districts in South Carolina also have been approved. Temporary classrooms have been approved for McCracken County in the Paducah area and assistance has been extended to the city of Paducah for rehabilitation of some classrooms.

REVISED COST ESTIMATE ON SAVANNAH RIVER PROJECT

Mr. BOYER. May I add something on the question of the Savannah River construction? We have asked the du Pont people to prepare a revised estimate on the basis of the 40-percent design completed to date. That is being prepared now, and when completed will be studied by the staff of the Commission.

Senator MAYBANK. Do you think it will be completed in time for us to put in these hearings?

Mr. BOYER. I doubt it very much, but we are pressing for it, because we want to keep as up to date as we can on what this plant is going to cost.

Senator MAYBANK. How much money has been spent so far at Hanford?

Mr. MCCARTHY. I do not have that here with me. Mr. Noble may have it.

Mr. NOBLE. In the neighborhood of $700 million for Hanford plant and equipment.

Senator MAYBANK. Is Savannah bigger than Hanford?

Mr. BOYER. It is much more complex. They are not comparable as to types of equipment.

Senator ELLENDER. It might assist us if you could tell us in a few words what has caused this cost to rise. Is it the great number of buildings you have put up, or more machinery? Just what has caused that change of figures?

Mr. BOYER. The original figure was based purely upon a projection. Mr. Williams prepared that original figure one afternoon in order to arrive at the order of magnitude of the project, and in order to request funds to proceed with the work and get the project started.

An engineering estimate is based upon engineering designs where you take the time to work out the designs and then you lift off those designs the tons of concrete, the tons of steel, the amount of man-hours, and so forth. That is an estimate. This first figure was not an estimate.

The first real estimate that we have ever had was the estimate that was used as a basis for the request presented to the committee here last fall.

Senator MAYBANK. The deficiency?

Mr. BOYER. For a deficiency.

Even that estimate was based on completion of only 10-percent design. That is not a precise engineering estimate. We will not have the precise engineering estimate until all the designs are completed.

Now your question implies, why was our projection so low. In the first place, we had not localized it as to site. We had no idea as to what was going to be involved in the way of site development, the amount of pumping you had to put in, the amount of cooling water you had to circulate, and so forth. If you located in a section where the water was cold it would take a smaller volume of water than in sections where the water was warm. Even the type of equipment had not been determined at that time. Subsequently the type of equipment that was finally selected to go into these plants was different.

So I think that it is certainly a legitimate question as to why our ideas were so widely at variance. I think though when you understand the basis that was used in arriving at that original idea, it becomes clear as to the reason for the increase.

Senator ELLENDER. There was quite a bit of criticism about it and I want the record to show why it is that your estimates had changed. The first estimate was a shot in the dark. You did not know what it was about. You are now basing your estimates on actual engineering drawings and plans in order to figure out the amount of concrete, steel, machinery, and labor necessary to put those things together.

PERCENTAGE OF DESIGN COMPLETED

Mr. BOYER. May I, Senator, add a further thought. This variation in estimates is a source of embarrassment to the staff. Purely from an engineering point of view we would much prefer to be able to give you gentlemen estimates which represent the firm cost of a project. For us to do that would add from 18 months to 2 years to the time of completion of any project. Here we have been working on the Savannah River program for something over a year and a quarter or a year and a half. The designs are now only 44 percent

complete. If we were to wait to give you a precise engineering estimate, we would not be ready to ask you for money to proceed today. We would have to go ahead and carry the engineering design on to 80 or 90 percent completion before we could give you a precise cost estimate of the project.

Now we believe that time is very important, because it is going to cost whatever it is going to cost. We are going to exert our best efforts to do the job as cheaply as we can within the time we have to do the job.

ADDITIONAL COSTS OF IMPROVED ENGINEERING TECHNIQUES

Senator ELLENDER. Has there been any money spent on something that you will not need? In other words, have you met your estimates so far? Have you been complying with the designs? Have you had to change the designs after the thing started? Do you get what I am driving at?

Mr. BOYER. I understand. Are we going so fast that we are getting ahead of ourselves and spending money wastefully?

Senator ELLENDER. Yes.

Senatory THYE. In other words, is the research discovering new methods that make your present plans obsolete? That is the question. You are in a new field.

Mr. BOYER. That is a broad question. We are specifically talking about Savannah River.

Senator MAYBANK. The plant at Hanford I think cost more than was originally estimated. I do not know what your original estimate for Paducah was, but I remember distinctly Senator Cordon talking about Hanford on many occasions, saying it has gone up. He had asked the same question that Senator Ellender is asking now about Savannah. So I think whatever you might say to Senator Ellender should apply to all the plants.

Senator ELLENDER. What I am trying to do is put facts in the record to meet the criticisms that have been lodged against the Savannah River project.

Senator THYE. In other words, you are pioneering the field. Are the scientific minds finding that what you had planned for is now obsolete and that you must change your plans?

Mr. BOYER. We can answer that question very clearly and definitely, by saying that the program for Savannah River and the program for Paducah represent our best thinking and our best knowledge today as to methods of accomplishing the production of the materials that we want to produce.

(Discussion off the record.)

Senator ELLENDER. What I want to do is to have something in the record in order to answer the criticism, as I said, that has been lodged against this program so far. Let me put it this way to you: Are there any plans that were actually made and that are now at work that cost more than you anticipated? Is there any project you are now working on, for which you had plans formerly drawn which you presented to the committee, which has gone up in cost?

Mr. BOYER. In view of the sense of urgency in which we are working, I do not recall any project that we were able to make precise engineering estimates on.

Senator ELLENDER. So, as I said a while ago, the whole plan was a shot in the dark and since that time you have been more accurate in developing from an engineering standpoint the material needed, the labor needed, and everything else, so that you can now come before the Congress and say that this project costs so much and that will be about what it will cost?

Mr. BOYER. The accuracy will improve as the completion of the design progresses. So when we get this new estimate based on 40-percent design we should have a better idea of what it costs than we have with the present estimate based on 10-percent-design completion.

Senator ELLENDER. When you made your first estimate you had no engineering design whatever?

Mr. BOYER. That is absolutely correct. And therefore it was not an engineering estimate but an approximation.

WAGES PAID AT ATOMIC DEVELOPMENT PLANTS

Senator MCMAHON. I think it is particularly important that you should get that in the record at this time because of the $765 a week plumber at Los Alamos.

I want to make a point. I heard a radio broadcast the night that came out saying the Chairman of the Commission estimated Savannah River at $660 million. Now it is going to cost $1,200,000,000. Maybe the reason for that is to be found in the story out of Los Alamos when it was developed that the plumber got $765 for a week's work.

Senator THYE. Is there any truth to that statement?

Senator MCMAHON. The joint committee made an immediate investigation of that situation. We have made a preliminary report to the Congress on the facts. A more detailed report will be submitted before this appropriation bill goes on the floor.

Senator MAYBANK. Why can we not have this so we can include in the record here the wages paid at the various atomic plants? There is no secret about that. Let us make that a part of the record to refute some of these statements made about you and which have been called to my attention.

Hourly rates paid to certain crafts in certain locations where AEC construction is being performed

Craft	Location						
	Los Alamos area, Santa Fe, N. Mex.	Test site, Las Vegas, Nev.	Reactor test site, Arco, Idaho	Hanford area, Richland, Wash.	Radiation laboratory, Berkeley, Calif.	Bettis Field Pittsburgh, Pa.	Argonne National Laboratory, Chicago, Ill.
Air tool operators	$1.65	$1.95	$1.65	$2.00	$1.80	$1.825	$2.10
Asbestos workers	2.50	2.75	----	2.90	2.585	2.875	2.60
Boilermakers	2.55	2.53	2.68	2.53	2.53	2.75	2.60
Bricklayers	3.25	3.00	2.75	3.00	3.25	3.00	2.85
Carpenters	2.25	2.45	2.20	2.42	2.45	2.75	2.70
Cement finishers	2.20	2.50	2.475	2.40	2.42	2.75	2.695
Electricians	2.86	2.575	2.75	2.75	2.65	2.95	2.85
Ironworkers:							
Structural	2.45	2.62	2.365	2.50	2.70	2.875	2.75
Reinforcing	2.20	2.38	2.285	2.35	2.55	2.875	2.75
Laborers	1.35	1.75	1.54	1.75	1.70	1.70	2.05
Painters, brush	2.25	2.52	2.20	2.42	2.45	2.5575	2.55
Plasterers	2.75	3.25	2.75	3.00	3.15	3.025	2.55
Steamfitters	2.75	3.00	2.625	2.75	2.625	2.825	2.60
Power equipment operators:							
Air compressors	2.20	2.05	1.95	2.00	2.13	2.80	2.65
Hoists	2.20	2.25	1.95	2.10	2.41	2.80	2.65
Shovels	2.35	2.50	2.25	2.45	2.96	2.90	3.00
Roofers	2.175	2.50	2.20	2.195	2.50	2.625	2.55
Sheet metal workers	3.00	2.62	2.25	2.45	2.50	2.875	2.695
Truck drivers	1.50	1.75	1.70	1.80	1.875	1.775	1.87

Craft	Location							
	KAPL, Schenectady, N. Y.	Savannah River plant, South Carolina	Oak Ridge area, Oak Ridge, Tenn.	Paducah area, Paducah, Ky.	Wabash project, Dana, Ind.	Rocky Flats, Colo.	Fernald, Ohio	Pantex plant, Amarillo, Tex.
Air tool operators	$1.71	----	$1.20	$1.65	$1.80	$1.925	$1.75	$1.575
Asbestos workers	2.55	$2.50	----	----	2.665	2.475	2.55	2.50
Boilermakers	2.55	2.475	----	2.45	2.65	2.50	2.475	2.475
Bricklayers	2.83	2.50	2.75	3.00	2.90	3.00	2.90	3.25
Carpenters	2.42	2.00	2.15	2.125	2.25	2.35	2.475	2.25
Cement finishers	2.83	2.25	2.10	2.20	2.48	2.475	2.365	2.475
Electricians	2.70	2.50	2.65	2.50	2.50	2.75	2.70	2.50
Ironworkers:								
Structural	2.695	2.25	2.30	2.50	2.75	2.35	2.665	2.375
Reinforcing	2.695	2.00	2.15	2.50	2.75	2.35	2.50	2.25
Laborers	1.71	.90	1.15	1.50	1.65	1.575	1.65	1.35
Painters, brush	2.115	2.00	1.95	2.25	2.00	2.39	2.31	2.25
Plasterers	2.83	----	2.50	----	2.75	3.30	2.67	3.00
Steamfitters	2.55	2.60	2.50	2.60	2.50	2.65	2.64	2.50
Power equipment operators:								
Air compressors	2.15	1.75	1.55	2.10	2.325	2.31	2.60	1.925
Hoists	2.48	1.75	1.85	2.30	2.325	2.31	2.60	2.20
Shovels	2.70	2.25	2.25	2.30	2.65	2.48	2.60	2.475
Roofers	2.45	----	1.70	2.00	2.10	2.475	2.255	2.05
Sheet metal workers	2.45	2.25	2.25	2.35	2.35	2.325	2.45	2.50
Truck drivers	1.705	1.00	1.25	1.40	1.65	1.65	1.60	1.375

AVERAGE HOURLY RATES PAID

	ENR [1]	AEC [2]
Skilled (bricklayers, carpenters, and ironworkers)	$2.758	$2.613
Common (laborers, building and heavy)	1.654	1.555

[1] Data taken from Engineering-News Record of Jan. 10, 1952. Data is based upon rates in 20 metropolitan cities.

[2] Data based upon the prevailing rates listed above for Atomic Energy Commission locations. Data developed in same manner as the ENR rates.

Senator McMAHON. The statements are in the record as to the facts relating to that incident at Nevada, a full statement of them, and we will have a more complete record. Perhaps I should say, Senator Thye, that the bare bones of that case are as follows. I do not know why I should testify to it when the Commission is here. I know what the story is.

Mr. DEAN. I shall be happy to state it in summary form.

Senator McMAHON. I think it is important that the Congress and the people not get the idea that the Los Alamos situation is repeated throughout this program because the joint committee finds it is not.

Senator THYE. I think we must get all the facts and get them in the record, because it is not only damaging to the Commission but it is damaging to the Joint Atomic Energy Committee as well as any man serving in Congress.

Mr. DEAN. Could I make a brief statement?

Senator MAYBANK. I wish you would, because this hearing before Senator McMahon refers to a statement by you and Mr. Carroll Tyler, who is manager of that plant.

Mr. DEAN. I would like to make a few categorical statements at the outset, if I may.

Let me acknowledge that this has been a very unfortunate incident public-relationswise, because anything of this kind that causes people to feel that this situation generally prevails in the atomic-energy program is very harmful to everybody connected with it. I would like to say very flatly this does not prevail throughout the atomic-energy program. This was a very unique situation at Las Vegas.

PERMANENT TEST FACILITY

It grows out of this fact. The Las Vegas range has made one of the most important contributions to the atomic-energy program, certainly since I have been in it, for this simple reason: It enables us to go out fast from Los Alamos and immediately test an idea instead of taking a very expensive route, timewise, dollarwise, logisticswise, by having to go to Eniwetok, because it takes time to plan it—many people to plan it. We at last have a range practically at the back door of the Los Alamos laboratory.

The things that have come out of the Nevada tests have been the most significant things from the standpoint of our stockpile. The things we tested out, the first shot at Las Vegas, have been incorporated in our stockpile, and it is much to the good of the stockpile that they have been incorporated. These ideas are already in today; it is not theory.

Now the situation that prevailed this last summer when this unfortunate incident of the plumber took place was this: We had just finished the Eniwetok test. Most of our test team was completely wrapped up there into May, and we commenced construction shortly thereafter at Las Vegas of a permanent test facility. Heretofore it was completely a jerry-rigged affair—little shacks, no accommodations, nothing. We also at that time had a program laid out as to the type of shots we wanted to make. One of these was extremely important. I have described it to you off the record and shown to you what was tested. Unfortunately I cannot do this on the record. Suffice to say it was one of the most important shots ever fired.

We put a time schedule on this test, not only the test itself but the construction of the facilities, and they came together. In other words, we were planning a test but we were also building the test facilities. This brought about confusion.

Now Las Vegas is a very unique region. First, you are isolated. You do not have the conditions of work you have if you are close to a center of population. Los Angeles is 300 miles away. We must get people to come up to that desert location. And the camp at that time was not an attractive place to live. There were eight bunks in a room. Our cafeteria was overcrowded. Everything was difficult. We had to get the men to come up and live away from their families. There were no accommodations for their wives. We had to bring them up in the desert, pay their expenses of travel up there, and pay them according to regular union rates.

Now a man in that situation wants to work more than 40 hours a week. He has nothing else to do. Fortunately we wanted him to work more than 40 hours a week because we had a tough schedule to meet. These shots were to come off on the 15th of October.

OVERTIME WORK OF PLUMBER

The nerve center of this whole operation is called the control post and this was the little building where the plumber worked virtually around the clock to get this done in time for the test, so that we could shoot. It was in the week just before test time that he was paid this unusual amount of money for overtime work actually done at the site, and there are other illustrations of overtime that was necessary during this same period.

When you study the record I think you will find that the concentration of overtime came, significantly enough, in the week just prior to the test, not way back in June, July, August, of the summer months.

Senator MAYBANK. How much was the overtime?

Mr. DEAN. He worked 40 hours regular time at $3.50 an hour. That is the regular rate for a plumbing superintendent. He worked an additional 83 hours in that same week, bringing it to a total of 123 hours of work. This meant that he had only 6 hours of sleep a night. But he was the superintendent, he was the man in charge of getting the heat into the building—because there is cold weather in Nevada at this time of year—and of doing such other plumbing jobs as were necessary to finish it. He was paid, it is true, under a cost-plus-fixed-fee contract. That became necessary because the contractor who had originally taken the construction of this building on a lump sum was not able to finish it. It became apparent to us he was not going to finish and 3 weeks before test time we had no alternative but to put a cost-plus-fixed-fee contractor in to get the job done.

Senator ELLENDER. Could you recover anything from the man who failed to perform his contract?

CONTRACTS

Mr. DEAN. That is the question now that is being litigated before our Board of Contract Appeals out there in the form of a claim by the lump-sum contractor against the Commission for having canceled his

contract. He said it was unfair to do so; he could have completed it, and so forth.

Senator McMAHON. You see, under the law the same contractor who had a lump-sum contract for $617,000 could not have his contract abrogated and he be told to go ahead and do the job on a cost basis. In other words, you have to take another contractor and cancel, if you are going to change the terms of the contract.

Mr. DEAN. That is correct.

Senator McMAHON. It is likewise true that the lump-sum contract was $617,000 for this facility by the low bidder—the fellow who was canceled on. The next highest bidder was $722,000. There were four more that ran up to some $896,000, if I am not mistaken. As I did get from your previous testimony, the additional cost over the low bidder was $72,000. So the unit was finished off for about $23,000 less than the next highest bidder, plus the fact that you have a chance of bringing suit for recovery of $72,000. Is that not correct?

Mr. DEAN. That is correct.

I do not say this by way of justification for this situation. I simply am saying two things, really. One is that I am trying to describe the type of situation in which this kind of abuse can happen—the atmosphere in which it does. It is a very tense time just prior to each shot, particularly when you are trying to complete the facility necessary to have the test.

REASONS FOR NOT POSTPONING PROJECT

Now you can go down to Los Angeles at great cost at that time, call up some other men and find quarters for them, and work them a shorter workweek. We did not have quarters for additional men. You could do this; this would be one alternative. We did not have the time left to do that, and it would have cost the taxpayer more.

Furthermore, the alternative of postponing the shot at a time like that when everything is going would have been very expensive because you have congregated on the spot some 600 scientists, you had some 8,000 troops waiting around who were to be used, and you had all the construction people who have to close down their work at shot time. Those expenses would have run you to something like $30,000 or $40,000 a day for 1 day's delay. It is significant and it must be measured off against the $756 for 1 week for the plumber.

This was the kind of setting. We hope this will not happen again. We do not want it to happen. We think it is too long to work people. We think it is too much money for them to get.

I do want to indicate the pressures we are up against just prior to the test. It is a very peculiar situation that exists out there at this isolated area.

WEEKLY WAGES PRIOR TO ATOMIC TESTS

Senator ELLENDER. How many such cases have you had? Is that the only one?

Mr. DEAN. We have quite a number of men who were paid over $500 in the week prior to test. These were for the most part in the categories of plumbers, electricians, primarily in that category. But those are the men whom you need at the last minute, not only for con-

struction, but we will have people up there prior to the test like wire splicers and electricians who are working on these cables, making sure everything clicks, and it is practically around the clock that these men work. Our own people do, too, but they do not get paid for that.

Mr. BOYER. May I add one piece of information? We heard this comment that was referred to here about the fact that maybe that is why Savannah River costs were up. We knew that it did not apply, but we had an analysis made, and the gross earnings paid any mechanic at the Savannah River project so far is $220 for 1 week's pay. That was an exceptional case.

Senator MAYBANK. What is the average down there?

Mr. BOYER. I do not know that we have the average.

Mr. DEAN. What is the workweek now?

Mr. COOK. It is 45 hours at Savannah River. That is the work schedule there. The average weekly payroll for hourly workers at Savannah River the week of January 17 was $85.05.

It should be understood that this figure is an average based upon the numbers and types of craftsmen actually working for that period. As the job progresses and installations of equipment predominate, wages will rise and the average wage paid will increase proportionately.

Senator THYE. How much overtime does that represent?

Mr. COOK. That is based on a workweek of 45 hours a week, 5 hours of which is overtime.

RAW MATERIALS

Mr. DEAN. Mr. Johnson will cover raw materials.

Mr. JOHNSON. I have an unclassified statement. Shall I read it or place it in the record?

Senator MAYBANK. You may place it in the record.

(The statement referred to is as follows:)

RAW MATERIALS PROGRAM FOR FISCAL YEAR 1953

The budget for the raw materials program is divided into three main categories: procurement, exploration, and process development, including research. The cost of each of these activities has increased year by year and will continue to increase until we have an assured supply of uranium and other source materials adequate for the production program. The necessity for speed in expanding uranium production in order to meet the requirements of the new atomic energy plants now under construction not only adds to the direct cost of procurement but may involve assumption of greater risks in exploration, development, and plant construction than would be the case in a more normal expansion program.

The purchase of uranium ores and concentrates represents the major item of expenditure under the raw materials program. The increased expenditures indicated in the budget are mainly the result of increased uranium production but are also attributable to somewhat higher prices. Plans are under way or completed for greatly expanded production from domestic, Canadian, and South African sources. Commitments already made or now under negotiation will lead to a rate of expenditure for uranium ores and concentrates which may by 1958 be more than treble that for fiscal year 1953. These additional supplies of uranium are needed to feed the production plants now in operation or under construction.

Our programs for exploration and process development also have been greatly expanded. The ability to meet the requirements of existing and proposed production plants is largely the result of intensive exploration and process development over the past several years. These activities must be further expanded in order to find or develop additional sources of uranium and to develop processes for utilizing low-grade uranium-bearing materials.

CONSTRUCTION, MISCELLANEOUS PROJECTS

Mr. JOHNSON. The raw materials breakdown begins on page 24 of the justifications which is in the classified section.

(Discussion off the record.)

Senator MAYBANK. I understand that you gentlemen have appeared before the House committee. Have you completed your testimony before the House Subcommittee on Appropriations?

Mr. DEAN. Yes, sir.

Senator MAYBANK. This appropriation that we are hearing here is identical with the House committee report, then?

Mr. DEAN. That is correct.

(Discussion off the record.)

Mr. JOHNSON. The only construction item for raw materials in the 1953 budget is $100,000 for miscellaneous projects throughout our western operations. It is based upon our experience for the need of temporary ore buying stations, camps of various kinds, and other types of additions to our existing plants. We expect that we may need a sum of $100,000 during the year for these miscellaneous items.

Whenever a new uranium find is made, we endeavor to set up some facility so that the miner will obtain a market for his ore as early as possible, because by selling his ore he is able to finance continued operations. We cannot predict exactly where we are going to build these plants or some of the other items that are included in this $100,000.

Senator ELLENDER. Are these merely testing plants established in order to determine the amount of uranium or whatever you are looking for in the particular product that is brought to you by the miner?

Mr. JOHNSON. No. The ore buying station is a small operation where the miner delivers his ore, the ore is weighed, it is sampled, and he receives payment on his ore upon the basis of weights and samples.

Senator ELLENDER. And testing?

Mr. JOHNSON. The testing is not included in that. We send the samples to our laboratory for testing. They are not tested on the grounds.

Senator ELLENDER. How do you determine the amount that is to be paid?

Mr. JOHNSON. That is a matter of chemical analysis. We pay on the basis of the number of pounds contained in the ore delivery.

Senator ELLENDER. Where is that done?

Mr. JOHNSON. The sample is taken at the point where the miner delivers his ore and is then sent to our chemical laboratory.

Senator ELLENDER. So that not each sample he brings is tested? It is what he takes from that particular area that has previously been tested?

Mr. JOHNSON. That is right.

Senator MAYBANK. This is the only construction with which you are charged?

Mr. JOHNSON. Yes, sir.

Senator MAYBANK. Last year and the year before last we discussed the question that you had a duplicate of all your strategic operations. In other words, you have two of this operation, two of that operation, and so forth. Without going into detail, can you tell us how that is

getting along? I am thinking, for instance, of the St. Louis plant, in case you want another plant like that.

Mr. DEAN. We are building a plant like that at Cincinnati. We really have in the feed-materials line duplicate installations. The same principle is carried out really in the production of fissionable materials, too. As you know, you have your Paducah and you have your Oak Ridge as well. The same thing is generally true over in the weapons end. Generally, there is a duplication—probably that is not quite the right word—but there are facilities so that if you are knocked out on one, you can run them another route.

Senator MAYBANK. That is what this committee has urged, Senator Bridges in particular, that you ought to have duplicate facilities in case of being knocked out so you could keep on with your production.

Gentlemen, it is 12:30. Let us recess until 2:45 this afternoon.

AFTERNOON SESSION

DIVISION OF PRODUCTION

ATOMIC PRODUCTION PROGRAM

Senator MAYBANK. The committee will come to order.

Mr. Boyer, what is the wish of the Commission now?

Mr. BOYER. Mr. Chairman, we would suggest that Mr. Cook, who is Director of the Division of Production, summarize for you the Fissionable Materials Program and the construction items that go with it.

Senator MAYBANK. As I understand, this is all on the record?

Mr. BOYER. This portion is on the record.

Senator MAYBANK. I would like to see as much as possible put on the record so that when the appropriations are brought up in the Senate we will not find that everything was off the record.

Do you have a statement that you want to file?

Mr. COOK. I have a brief unclassified statement I would like to file.

Senator MAYBANK. Would you rather read it?

Mr. COOK. Yes.

OPERATING COSTS

Senator MAYBANK. On what page is the operating program?

Mr. COOK. Volume 1, page 33, in the classified section.

Senator MAYBANK. Go ahead and proceed in your own way.

Mr. COOK. Although the funds for operations requested in this budget for the production of fissionable materials are substantially greater than ever before, they represent production of materials at unit costs of processing which are materially reduced from the unit cost experienced during the years of AEC operation from 1947 to date.

By the end of fiscal year 1953 we will be producing both plutonium and U–235 at rates significantly higher than at present. Both the increase in production and the increase in operating costs result mainly from the operation of new plants that are being placed into operation prior to the end of fiscal year 1953.

Over the past several years the productivity of the existing plants has been increasing significantly as a result of previously authorized

expenditures for plant modifications enabling us to take advantage of results of the research and process improvement programs. A majority of the funds requested for construction in the present budget, exclusive of the additional funds required for the Savannah River plant, are for projects which will enable us to continue the upward trend of production from the existing plants.

Senator MAYBANK. In other words, you are going to produce more?

Mr. COOK. Yes, sir.

(Discussion off the record.)

Senator MAYBANK. In reference to the increasing operating expenses, it appears that this is divided throughout the various plants now under operation and new plants that will come in operation?

Mr. COOK. Yes, sir.

(Discussion off the record.)

PLANT AND EQUIPMENT FOR FISSIONABLE MATERIALS PROGRAM

Mr. COOK. If you desire, sir, starting with page 741, which is the plant and equipment item for the Fissionable Materials program, through page 748, those may be inserted in the record.

Senator MAYBANK. Without objection pages 741 through 748 will be inserted in the record.

(The pages referred to are as follow:)

DETAILED JUSTIFICATION OF CONSTRUCTION

Source and fissionable materials

	1951 actual	1952 estimate	1953 estimate
Cost obligated	$1,247,494,197	$359,962,271	$311,400,000
Cost incurred	276,114,563	817,000,000	770,520,000

Detail justification of costs to be obligated in 1953 for construction

1. Project No. 1-211-3001—Miscellaneous projects, Colorado Plateau.. $100,000

This project provides for all small construction anticipated to be required through the Colorado Plateau under raw materials' major operating program. This will be necessary in order to have an efficient and orderly operation under the larger program on the plateau in fiscal year 1953. Funds are provided for such minor construction as the establishment of preliminary ore buying stations at new locations, the possible remodeling or expansion of existing laboratory facilities at Grand Junction, Colo., enlarging the water and electrical systems, improvements to land in the Grand Junction area, and the expansion of warehousing facilities.

2. Project No. 2-221-2024—Reduction plant (see classified section, p. 749) $4,100,000
3. Project No. 2-221-3010—Pilot plant (see classified section, p. 749) 900,000
4. Project No. 2-221-3001—Improvements and alterations to existing feed materials facilities 715,000

This project covers a variety of changes and additions to existing plant and equipment comprising the chain of feed materials plants. Specific items cannot be accurately forecast, but the work involved will fall generally into health-hazard elimination, process improvements and corrections, and production continuity. The work included in these projects must be undertaken so as to assure the continuity of operation of the chain of feed plants, to safeguard the health and safety of personnel, improve present processes wherever possible with a resulting economy in product cost or an increase in plant output, and to provide for repair and maintenance of the plant facilities and equipment which arise

outside the scope of normal maintenance. The cost estimated for this work is based on experience gained in the operation of the plants.

5. Project No. 2–221–3009—Plant dismantlement and decontamination, Simonds Saw and Steel $65,000

The project covers the dismantling and decontamination of rolling mill equipment presently at Simonds. With construction of the facilities of the Feed Materials Production Center, Fernald, Ohio, a new rolling mill will be ready for operation by January 1952. The Simonds mill will then be closed down. The cost estimate is based on costs involved in work of a similar nature previously done.

6. Project No. 2–241–2029—Permanent decontamination facilities, K–25 ..... $1,063,000

This request is to provide the additional funds needed to complete the construction of a new decontamination facility. $500,000 was appropriated in the fiscal year 1952 budget to cover design work and procurement of equipment on which long delivery time is required by suppliers. Decontamination of gaseous diffusion plant equipment involves both normal, industrial, and radiation hazards which must be fully considered in the design of the facility. The present facilities do not have sufficient capacity to handle the decontamination work for the K–29 and K–31 cascades. It is necessary to provide larger decontamination-handling devices, trays, rooms, etc., due to the larger equipment used in the new cascades. The present facilities were not designed as an integral unit but were developed step by step on a minimum basis as necessary; also, most of the facilities are temporary. Based on the experience gained in the past few years the new facility is being designed and will be constructed as a complete and economical operating unit. The total cost estimate for the project ($1,563,000) is the same as that contained in the fiscal year 1952 budget.

7. Project No. 2–241–3032—Pilot plant alterations and modifications, ORNL $100,000

This project provides for additions and modifications to two pilot plants. The planned changes are as follows:

(1) Completion of a sample dilution laboratory which will provide facilities for high and low level storage of process solutions.

(2) The addition of a specific gravity testing area with appropriate equipment for sample dilution make-up.

(3) Addition of equipment for radio chemical and control laboratory.

(4) Additional process equipment and modifications to existing equipment in both plants.

8. Project No. 2–241–3034—Machine shop relocation (Y–12 area) $748,000

This project provides for the relocation of equipment in the Y–12 area. This relocation is necessary because the present expansion in the Y–12 area has caused additional equipment to be placed in the present facility resulting in an overcrowded, inefficient, and hazardous operation. The present location is in a temporary building which is in a bad state of repair. Due to the age and general condition of the building, even if major repairs were made, costs of continued maintenance would be excessive.

9. Project No. 2–241–3033 and 3038—Improvements and alterations to existing U–235 facilities (K–25) $316,000

In the fiscal year 1952 budget, $575,000 was requested to prefinance such work in the gaseous-diffusion plant area during fiscal year 1953. The present estimate is in addition to the previous estimate. A portion of the increase is to provide for additional improvements as a result of process development and will result in lower unit costs, greater productive capacity, and safer working conditions for operating personnnel. Other improvements are requested primarily to reduce maintenance costs and thereby, indirectly, to lower unit costs of production. Included in the estimate is $16,500 for minor capital improvements to noncity roads and streets. This estimate includes initial road stripping of noncity roads and streets, engineering study for relocation of an existing road, and other minor items for widening of existing noncity roads and streets for traffic safety, installation of additional grading, and improving sight distances.

10. Project No. 2–241–3036—Capital improvements, AEC security $84,000

This project provides funds for capital improvements required for security reasons, in areas under AEC Security Division jurisdiction. Personnel of this Division have responsibility for the controlled areas surrounding the plants. This area is a protection medium provided to prevent access to the plants by unauthorized persons. This project provides, among other things, for the completion of the patrol road and installation of road shoulders on sections of the patrol road.

11. Project No. 2–231–2040—Handling equipment (see classified section, p. 750) $225, 000
12. Project No. 2–231–2046—Equipment (see classified section, p. 750) 100, 000
13. Project No. 2–231–3023—Pile modification (see classified section, p. 751) 2, 000, 000
14. Project No. 2–231–3024—Decay storage facilities 1, 000, 000

It is proposed to build additional storage facilities with the necessary rail facilities to the building. Such facilities are used to store slugs discharged from the piles for a temporary period prior to separation. During this period many of the extremely high level fission products decay, thus making it more feasible to handle the material during ensuing separation processing. The estimated cost is preliminary and is subject to change as design proceeds. (For more detail, see classified section, p. 751.)

15. Project No. 2–231–3020—Plant addition (see classified section, p. 751) $3, 000, 000
16. Project No. 2–231–2043—Additional storage tanks for liquid chemicals 190, 000

Established policy requires that a supply of liquid chemicals be maintained in the separations area tanks to assure an uninterrupted production rate in the event of an emergency. At the present expanded rate of production, existing storage space is inadequate. The proposed additions, plus the existing storage capacity, will provide the added capacity required for this safeguard to operating continuity. The estimated cost is based on unit cost of tankage contained in recent bids for similar work. (For more detail, see classified section, p. 752.)

17. Project No. 2–231–3022—Additional waste tank farm $4, 200, 000

Primarily the additional tanks are required to accommodate the increased production resulting from plant additions. (For more detail, see classified section, p. 752).

18. Project No. 2–231–2052—Neutron monitoring instrument calibration facilities $175, 000

The neutrons against which Hanford personnel must be protected have a large and varying energy range. In this large energy range, many different processes take place as the neutrons pass through matter. As the theoretical formula governing these processes is inadequately known, the adequate solution of neutron exposure problems can be obtained only by experimental means. Currently available neutron sources at Hanford, produced by bombardment by particles from radioactive sources, produce neutrons with an energy spread of several MEV. Solution of problems involving neutron exposure requires equipment which can produce monoenergetic radiation at various MEV levels. Attempted calibration of neutron measuring devices currently in use with heterogeneous energy sources results in discrepancies in indicated dosage rates when used under identical field conditions. The development and calibration of instruments to overcome these difficulties is dependent on use of monoenergetic neutron sources.

It is proposed to construct a building adjacent to the existing Health Instrument Calibration Buildings, and to install a 2-MEV positive ion accelerator of the Van de Graaf type. The building will provide about 1,200 square feet of space. The building will be of concrete construction, and will include heavy concrete shielding walls where required. Services to the building will include normal lighting power required for the accelerator, and cooling water and drain.

Two types of positive ion accelerators are available commercially, the cyclotron and the Van de Graaf generator. Such equipment accelerates positively charged particles such as protons and deuterons to extremely high velocities in the energy range of millions of electron volts. The high energy particles so produced are arranged to impinge on various target material producing nuclear reactions, releasing other particles including neutrons and high energy gamma rays. The

Van de Graaf type has the advantage of producing essentially monoenergetic particles. The emission of the secondary particles is controlled to a desired angle by a magnetic field with the feature of having an energy spread no greater than that of the primary particles.

The positive ion accelerator will permit instrument calibration at various ranges of high and intermediate neutron energies. As the source can be switched on and off at will, exposure to calibrations' personnel will be significantly reduced. The necessity of replacing short-lived radioactive sources periodically would be eliminated. An accurate study of the effect of neutron bombardment on instrument components, such as tubes, resistors, and insulators will be possible.

19. Project No. 2–231–2048—Additions and improvements to telephone exchange $350,000

Because of the expansion of the Hanford facilities there has been an increased requirement for telephone service. It is proposed to improve and expand the present telephone facilities to Richland for both official and residential users. The present Richland telephone exchange facilities are overloaded to the extent that 18 percent of all calls during the busiest hours are rejected because all trunking facilities are in use. A condition of about 1.5 percent of "all trunks busy" is accepted by the telephone industry as the maximum for standard grade service. The present load will be further increased upon the completion of the 300 residences in Richland, and the start-up of new plant facilities now under construction. Even greater increases will result upon the completion of additional housing now being planned by both the AEC and the United States Army.

20. Project No. 2–231–3032—Additions to 703 building, wing 6 ..... $630,000

It is proposed that an additional wing be constructed to the Administration Building in Richland. This structure will be of concrete construction containing 28,800 square feet of space and in addition will include a basement for use as an air-raid shelter.

This project will provide needed additional office space which is required as a result of the present expansion and because of the necessity of vacating portions of the North Richland facilities to permit expansion of the military post located there. This additional wing will be a permanent structure; it will be constructed in such a manner that it may serve as a nucleus of a permanent-type administration building to which other permanent wings can be added in the future.

21. Project No. 2–231–3031—Improvements and alterations to existing plutonium facilities $1,499,000

This item covers various projects under $100,000 for minor improvements, alterations, and additions to the plant. Each year it is necessary for safety, economy, or production reasons, to accomplish numerous projects of this type. Many of them cannot be forecast or firmly planned sufficiently in advance to budget for them as individual items.

Detail by fiscal years is listed as follows:

Fiscal year:	*Value of projects authorized*
1949	$996,178
1950	494,141
1951	1,766,878
1952 (estimate)	1,300,000
1953 (estimate)	1,499,000

These projects represent modifications or additions to plant facilities, each costing less than $100,000 to incorporate process improvements resulting in lower unit costs or greater production capacity, improve safety conditions, provide additional space for expanding operating personnel forces, or reduce maintenance costs. The 1953 figure is based on the experience of past years since most of such projects are not identifiable until a short time before they are actually authorized and accomplished.

22. Project No. 2–200–2001—Technical facility (see Classified Section, p. 752) $5,600,000

23. Savannah River plant project 284,240,000

In acting upon the second Supplemental Appropriation bill, 1952, the House Committee on Appropriations recommended, and the Congress appropriated, $200,000,000 of the $484,240,000 requested by the Commission. Action on the balance was deferred until spring, since it was indicated that the funds appro-

priated would be adequate to finance the project until Congress could give it further consideration.

Additional funds will be required in the fiscal year 1953 to continue this project. At the present time, more detailed estimates are being prepared and reviewed. Therefore, the balance of the original estimate has been included in this budget as a tentative amount pending determination of the revised estimate. This $284,240,000 together with amounts appropriated in the fiscal years 1951 and 1952 would provide a total of $1,180,000,000 for this project.

The revised estimate, based on design completion considerably greater than the 10 percent design completion on which the earlier request was based, is expected to be submitted to the Commission in January 1952. Upon completion of the Commission's review, the revised estimate and appropriate justification material will be submitted to the Bureau of the Budget for consideration as an amendment to this present request for fiscal year 1953 appropriation.

Additional information of a classified nature is presented in the following classified pages 749 through 790.

SAVANNAH RIVER PLANT AND EQUIPMENT

Mr. COOK. I can cover briefly what the total of $311,400,000 consists of.

The biggest item is the $284,240,000 for the Savannah River program. That represents the difference between the estimate in the 1952 supplemental that we previously appeared before you on, and the funds that were granted at that time. This $284,240,000 will bring the figure back up to $1,180,000,000, which was the previous request in the fiscal year 1952 supplement.

Of the balance of $27 million, $4.1 million is for the construction of a reduction plant at Fernald, Ohio.

(Discussion off the record.)

PILOT PLANT ON RESEARCH AND DEVELOPMENT

The next item is a pilot plant in the amount of $900,000. It covers a research and development pilot plant for a new type of process which we feel will be much more economical than the present type plant.

Senator ELLENDER. How much is that?

Mr. COOK. $900,000.

Senator ELLENDER. This will be a pilot plant only?

Mr. COOK. It can be used permanently, but it would not have a large production capacity. It will be a small-scale plant to improve the process prior to building the production plant.

Since these sheets that are inserted in the record cover the program in unclassified form, if I can explain it to you off the record it probably will be better.

Senator MAYBANK. Without objection that may be done.

(Discussion off the record.)

Senator MAYBANK. You have spoken of Oak Ridge, Savannah, and Hanford, in general, of the installations you now have or the installations you will have; is that correct?

Mr. COOK. Yes, sir.

Senator MAYBANK. Are there any further questions, gentlemen? Thank you.

WEAPONS PROGRAM

Mr. BOYER. I would suggest, Mr. Chairman, that we go now to the weapons program. I will ask Colonel Fields from the Division of Military Application to testify on this portion of the budget.

I believe this is the first appearance of Colonel Fields before this committee. Colonel Fields, as you know, took General McCormick's place.

Senator MAYBANK. Will you tell us what page we should look at to follow you?

Colonel FIELDS. Yes, sir. It will be on page 112 of the first volume.

I have an unclassified statement I can make or just insert in the record.

Senator MAYBANK. We will appreciate it if that is inserted in the record.

(The statement referred to is as follows:)

WEAPONS PROGRAM FOR 1953

It is estimated that $228 million will be required in the weapons program for operating costs in fiscal year 1953, compared with $200 million estimated for the current fiscal year. The increase is due to the larger numbers of weapons which will be produced, the continuing program of full scale weapon testing, which is essential to advancement in this area, and the vigorous development effort on new weapon models, in which particular emphasis is being given to specialized capabilities. The increased effort will be evident at Los Alamos and Sandia Laboratories, where there will be some increases in personnel and facilities in 1953; and at the Amarillo and Rocky Flats (Denver) plants which are due for start-up late in fiscal year 1952.

Additional obligational authority in the amount of $55 million is requested in 1953 for weapon facilities, $41.6 million of this being to complete projects at a number of locations authorized and initiated in prior years, for which funds were appropriated only in part, and the balance of $13.4 million for 13 new projects at various installations.

Additional details of the weapons program are highly classified, as the committee is aware. I will be happy to go into such details off the record.

OPERATING PROGRAM STATEMENT AND NARRATIVE STATEMENT

Weapons

Total accrued cost, weapons program:	
1951 actual	$141, 515, 021
1952 estimate	200, 647, 900
1953 estimate	228, 000, 000

The requested amounts for the weapons program for fiscal year 1953 represent funds required to meet current military needs for advanced models of atomic weapons in sufficient numbers to accommodate the increasing supply of available fissionable materials in order that the Nation may maintain its position of world leadership in the field of atomic armaments. The details of these costs are set forth in the classified section, pages 112 through 170.

WEAPONS PLANT AND EQUIPMENT

Senator MAYBANK. Do you want this off the record?

Colonel FIELDS. Yes, sir, this will be off the record.

(Discussion off the record.)

Colonel FIELDS. Pages 791 to 798 may be placed in the record.

(The pages referred to are as follows:)

DETAILED JUSTIFICATION OF PLANT AND EQUIPMENT

Weapons plant and equipment

	Fiscal year 1951	Fiscal year 1952	Fiscal year 1953
Cost obligated	$103, 565, 791	$114, 314, 416	$55, 000, 000
Cost incurred	56, 000, 573	145, 500, 000	89, 360, 000

Detailed justification of costs to be obligated in 1953 for construction

Project No. 3–3100–2016—Divisional Laboratory and Administration Building, Los Alamos, $6,870,000

This project provides for the construction of a multistory office and laboratory building in technical area 3. The structure is to be of fire-resistive construction with an area of approximately 225,000 square feet and will provide space for the eight administrative departments and part or all of six technical divisions of the Los Alamos Scientific Laboratory.

The construction of permanent laboratory facilities in the new technical area is progressing rapidly and to achieve efficient and economical management of the new laboratories it is considered essential that administrative facilities be located in the same area. At present the administrative functions are accommodated in widely separated portions of the old technical area, with each group expanding from its small beginning wherever space could be made available. The centralization of these functions within one building will result in greater efficiency in administration and reduced operating costs.

The six technical divisions to be located in the new structure are presently occupying nine separate frame buildings in the old technical area. The existing facilities are structurally and functionally inadequate for present use. The collection of technical divisions in one structure of adequate size and in close proximity to their related activities will provide an efficient and economical operation. Preliminary planning on the project was initiated in February 1951; scheduled completion of construction is June 1954. The total estimated cost of the project is $7 million of which $130,000 was provided in prior years for preliminary design work. $6,870,000 to cover construction and completion is included in this budget.

Project No. 3–3100–3002—Demolition of vacated TA–1, Los Alamos, $350,000

This project provides for the demolition of certain contaminated buildings and other unusable structures in the old technical area. Completion of construction in the new technical area will permit the laboratory to vacate many of the existing temporary and semipermanent buildings. Preliminary studies have been undertaken as to the future use of vacated structures. However, final determinations will be based upon the severity of contamination and whether it renders the structure hazardous for ordinary usage.

Due to lack of experience, knowledge of the hazards which will be encountered and precautions that must be taken are intangible. However, the presently conceived solution consists of dismantling and reduction of the contaminated material concurrent with dismantling. Certain minor structures will be removed in compliance with the fire-prevention code. Dismantling will be held to a minimum as future occupancies require all the space which can be made available.

Work on this project will begin July 1952. Of the total estimated cost of $750,000, $350,000 is included in this budget with the balance to be requested in fiscal year 1954.

Project No. 3–3100–3003—Roads, utilities, and minor technical projects, Los Alamos, $2,045,000.

This project is a consolidation of the following items which have been presented as separate projects in previous years:

(*a*) Roads, utilities, and erosion control.
(*b*) Projects of $100,000 or less.
(*c*) Special projects of Los Alamos Scientific Laboratory.
(*d*) Communications, technical area.

Experience has indicated a need for construction of minor projects involving replacement, expansion, or correction depending upon the individual items. Examples are: The extension of roads and utilities to outlying sites originally conceived as minor remote installations but which through increased usage and expansion require service from basic utility systems; erosion-control applications in areas adjacent to laboratories requiring complete air treatment as excessive dust overloads air-cleaning equipment; changes in technical-program requirements and research and development result in the need for alterations or new unanticipated construction; changes in occupancy or security requirements necessitating construction of guard stations, fencing, lighting, or other physical security measures; improvements of a capital nature arising from routine maintenance; and preliminary design studies are needed as a basis for future construction requirements. Accelerated expansion of the laboratory will result in continued demand for temporary work space and building modifications.

Project No. 3–3104–3021—Maintenance shop and warehouse, Sandia, $690,000.

This project provides for a building of 60,000 square feet gross area for housing of the maintenance-department functions including maintenance shops and warehouse to be constructed outside the technical area. Some of these functions are presently located within the technical area in a portion of Building 834. By moving these functions to a new building space in Building 834 could be utilized for general stores which would in turn release additional space in road warehouse for classified storage of the road department.

In addition to housing the maintenance-department functions this new building would provide inside storage for hoists, electric motors, metal partitions, and other building materials which are presently stored outside. Larger facilities will also be furnished for millwrighting and other shop work for which present space is inadequate. By locating the maintenance-department facilities outside the technical area personnel could be hired on the basis of a P rather than a Q clearance and would solve many of the problems arising from a high turn-over in this type of personnel.

The total estimated cost of this project is $690,000, all of which is included in this budget.

Project No. 3–3104–3022—Addition to medical and personnel service building, Sandia, $180,000

This project provides for the construction of an addition to the medical and personnel service building of 12,000 square feet gross area. The building will contain utility services for toilets and other facilities required for office type occupancy. This additional space is required to house the personnel department which is presently occupying temporary Army buildings on loan from Armed Forces special weapons project. It is desired to combine the personnel department, employee service and medical clinic in one building outside the technical area. Work would be started in July 1952 and be completed in June 1953.

The entire estimated cost of the project is included in this budget.

Project No. 3–3104–3024—Modifications to temporary buildings, Sandia, $103,000

This project covers modifications to temporary buildings T–838, T–851, T–859 and T–866 which includes revising the heating system from wall heaters to radiators, removal of a considerable portion of interior partitioning, rearranging of other partitioning, interior repairs, installation of additional toilet facilities. This rehabilitation of existing temporary buildings will provide necessary facilities for expanded activities of the Sandia Corporation without construction of new office buildings. Work will begin July 1952 and be completed June 1953.

The entire estimated cost of the project is included in this budget.

Project No. 3–3104–3025—Miscellaneous construction, technical area, Sandia, $535,000

This project comprises minor construction, renovation, additions, and removals as necessary. Experience has indicated a need for minor projects of various types which cannot be predicted in advance. Changes in occupancy or operating conditions or techniques and correction of deficiencies in heating, lighting, or fire protection contribute to this requirement.

Work on this project will be carried on during fiscal year 1953.

Project No. 3–3126–3006—Fiscal year 1953 improvements, Inyokern, $128,000

This project provides for the following plant revisions and addition to increase the efficiency and reliability of the operation:

(*a*) Conversion of the existing radial electrical distribution system in the operating area to a loop system by increasing the capacity of existing distribution cables and extending duct work and cables.

(*b*) Provisions for an emergency tie line to the operating feeder and installation of sectionalizing switches to eliminate power outages in the administration area and operation area in case of fault in either.

(*c*) Erection of prefabricated portable steel buildings to house four 75 kilowatt skid-mounted Caterpillar Diesel generators and electrical switch gear to provide emergency stand-by service. These generators are presently stored in the open and subject to excessive deterioration.

Work on this project will begin August 1952 and be completed April 1953.

Project No. 3–3112–3028—Eniwetok Proving Ground improvements, fiscal year 1953, $1,500,000

This project provides for miscellaneous improvements to facilities at the overseas test site. The work will consist principally of replacing warehouses and

other buildings salvaged after the Sandstone Operation in 1948. In placing these buildings into a usable condition repairs were limited only to those necessary to keep the buildings in service temporarily. It is anticipated that by fiscal year 1953 most of these structures will have deteriorated to the point where replacement will be necessary. Work will begin July 1952 and be completed March 1953.

Classified projects (details are shown in the following classified pp. 799–815), $42,599,000

Of this total $1,015,000 is to cover four new projects identified as follows:

Project No.:	*Amount*	Project No.:	*Amount*
3-242-3002	$65, 000	3-231-2053	$650, 000
3-242-3003	150, 000	3-231-2054	150, 000

The balance of $41,584,000 is to complete projects authorized and initiated in prior years, for which funds were appropriated only in part. These projects are identified as follows:

Project No.:	*Amount*	Project No.—Continued	*Amount*
3-311-0006	$100, 000	3-242-0006	$130, 000
3-311-1016	300, 000	3-242-1006	32, 000
3-311-1021	50, 000	3-242-1007	178, 000
3-311-1024	990, 000	3-300-1007	38, 304, 000
3-314-1016	1, 500, 000		

NEW PLANT CONSTRUCTION

Colonel FIELDS. We are requesting obligating authority of $55 million of which $41,500,000 is for plants which were authorized and initiated in prior years but for which funds were appropriated only in part. That is the bulk of the $41,500,000.

The balance of $13,500,000 is for some 13 new projects which are listed on pages 791 to 798, inclusive, in volume 3.

Senator THYE. Would it be a fair question to ask regarding how many automobiles, how many chauffeurs, and what is the over-all expense of administration in connection with your activity? That would not be secret.

Senator MAYBANK. How many chauffeurs do you have?

Mr. BOYER. Mr. Waller will cover that.

Senator MAYBANK. Would it be a wise thing at this point to get away from the list as you have it, Mr. Boyer, just to put something in the record here so we can make some sort of record? You were asked about how you check, about your accountants and your auditors. Do you not think that would be a proper thing at this time?

Mr. BOYER. I think we might.

Senator MAYBANK. We can divert from the off the record material and put something on the record.

Mr. BOYER. Are you interested in the question of what we spend to administer this?

Senator MAYBANK. And who checks the books and who checks the accountants.

Senator THYE. I think that would be all in order. Then you have the administrative expense. You then get an idea how that administrative expense has mushroomed and so on. That would be something that we could at least put our fingers on.

Mr. BOYER. Why don't I ask Mr. Waller to testify briefly on the administrative services and we will also insert something in the record on our financial controls.

(The information referred to is as follows:)

Summary Statement of Financial Controls in the Atomic Energy Program

BUDGETARY CONTROLS

AEC financial controls begin with the budget. As soon as final congressional action on an AEC appropriation bill becomes known, the budget is revised by the General Manager to the extent necessary to conform with the action taken. Upon receipt of the quarterly apportionment by the Bureau of the Budget, the Controller allots to each major organizational unit the amounts of obligational authority required by it for carrying out approved programs. These allotments carry the limitations specified by the appropriation act, such as those on personal services and travel, and the quarterly apportionments of the Bureau of the Budget. Where program activities have become uncertain, funds are held in reserve by the Bureau of the Budget or the Controller and are not released until the circumstances warrant it. Amounts allotted, if not used, are rescinded.

Concurrently with the issuance of allotments, approved financial plans are released to each major organization. These plans establish in some detail the way in which available funds and resources are to be applied in the conduct of the work. Cost ceilings are established for each major operating program and the net changes are prescribed for levels of inventories, working capital advances, and outstanding obligations for operations.

The plans also establish limitations on obligations to be incurred during the fiscal year for plant and equipment with ceilings for each subprogram. The plan is supported by a detailed list showing the total estimated cost of each project and amounts available for obligation for each project during the current fiscal year.

Organization heads are required to live within the limitation of their allotments and financial plans. The budgetary status of each organization and program is reported monthly by the controller to division directors, the General Manager, and the Commission. Procedures are in effect whereby individual responsibility is definitely fixed for any overobligation or overexpenditure of an allotment, should such occur. Shifts in allotments and financial plans are authorized by the General Manager to meet changing conditions and supplemental appropriation requests are developed when the need becomes apparent. Special procedures exist for complying with the construction rider established in fiscal year 1950 which require action by the Bureau of the Budget when overruns develop in construction projects or when need arises for projects not previously submitted to the Congress in budget estimates.

ACCOUNTING CONTROLS

During the fiscal year 1949, AEC completed the basic installation of an industrial-type accounting system for recording and reporting its financial activities. The accrual basis of accounting is used, careful distinction is made between capital and operating expenditures, and financial controls as well as quantitative controls are maintained for all fixed assets and stores inventories. Monthly balance sheets and operating statements and a comprehensive annual financial report similar to that of any large industrial corporation are prepared. Declassified and condensed versions of these annual reports were included in the tenth and eleventh semiannual reports to the Congress. These monthly reports are used at all levels of management to check actual performance against budget programs and for other purposes incident to the administration of the program.

With the approval and active support of the Comptroller General, the AEC's basic accounting records are maintained by the cost-type contractors who carry out the atomic energy program. AEC maintains controlling accounts through which the contractors are held accountable for all funds and property provided to them. These funds and property are kept entirely separate by the contractors from their own assets and are fully supported by independent accounting systems which tie in with the AEC controls. The contractors submit complete monthly financial statements which are consolidated with AEC's statements in preparing the over-all reports for the agency.

The annual reports of the Comptroller General for the past several years have commented favorably on the progress of the AEC accounting program. AEC was the first agency—outside of those covered by the Corporation Control Act—to adopt both an industrial-type accounting system and a cost-based budget for its operations.

AUDITING CONTROLS

The AEC controller establishes the policies and standards under which auditing of contractors' and field offices' accounts is performed. He also has a staff

whose duty it is to visit all field offices periodically and survey the manner in which these standards are being carried out by the field audit staffs.

All disbursements by AEC are made by United States Treasury disbursing officers to whom appropriation funds are advanced as required through the Washington Division of Finance which carries the budgetary allotments. All disbursements are preaudited by finance staff through the examination of customary supporting approved documents. At most offices, periodic post-audits are also made on a test-check basis by another finance unit to verify the workings of the controls.

AEC requires that contractors accountable for AEC funds establish adequate methods of preaudit and other recognized methods of internal control to prevent or detect improper diversion of funds or property. Each AEC operations office maintains a staff of qualified auditors who periodically examine these controls and test the effectiveness of their operation by independent examination and verification to the extent they deem necessary. Where this system is not used or where the controls are considered inadequate, AEC auditors verify completely all items claimed for reimbursement.

Field finance directors are appointed by the managers of operations with the advice and consent of the controller who can also request the removal of any finance director where, in his opinion, the quality of the accounting and auditing work are unsatisfactory.

The General Accounting Office maintains a staff of auditors having full AEC security clearance who conduct site audits at all installations. They originally conducted the conventional voucher-type audit exclusively but in recent months have commenced the application of the comprehensive-type of audit which is much broader in scope.

The Controller also has an investigative staff whose responsibility it is to conduct periodic inspections of procurement practices, commercial activities, and other work of the contractors or field offices to detect irregularities in the handling of government funds or property which might not be detected by normal audit methods. This staff is also used to investigate allegations of financial irregularities that come to the attention of the Commission or the Washington staff.

Senator MAYBANK. Mr. Waller, will you come up and have a seat and testify for the record?

PROGRAM DIRECTION AND ADMINISTRATION AND PERSONAL SERVICES

Mr. WALLER. Mr. Chairman, I have a very brief prepared statement. It refers to pages 521 to 526.

Senator MAYBANK. Without objection those pages may be placed in the record.

(The pages referred to are as follows:)

OPERATING PROGRAM SUMMARY AND NARRATIVE STATEMENT

Program direction and administration

Area	1951 actual	1952 estimate	1953 estimate
Raw materials (field)	$253,952	$376,494	$487,851
New York	2,202,513	2,740,598	2,732,232
Brookhaven	103,222	111,655	117,961
Hanford	1,984,546	2,239,655	3,138,340
Oak Ridge (includes Kentucky)	3,601,763	4,491,892	4,629,291
Dayton	82,145	95,372	113,270
Savannah River	839,536	1,979,497	2,431,888
San Francisco	50,809	630,564	1,133,669
Santa Fe (includes Sandia)	4,060,315	5,042,850	5,491,809
Idaho	1,018,236	1,320,182	1,210,891
Chicago	1,326,794	1,482,785	1,549,694
Lockland		77,200	171,859
Ames	66,059	77,604	80,570
Berkeley	217,293	259,735	283,470
Pittsburgh	130,502	209,975	247,647
Schenectady	318,734	365,498	419,507
Washington headquarters and extensions	7,544,419	9,865,418	11,160,051
Total accrued costs	23,800,838	31,366,974	35,400,000

PROGRAM SUMMARY STATEMENT

The costs of general management, executive direction, general and technical supervision of program operations, negotiation and administration of contracts, and supporting administrative activities are segregated from the other operating costs of the Commission and are budgeted separately as requirements for program direction and administration. This program excludes all costs of (*a*) actual operation, in whole or in part, of plants, laboratories, or other facilities; (*b*) activities that are an integral part of or necessary adjuncts to other program operations; and (*c*) construction of facilities.

The costs of program direction and administration are generally related to the size and complexity of the other operating programs. Construction activities, while they may not add to operating costs of other programs, do affect the costs of program direction and administration since personnel employed for the management, control, and inspection of construction projects are chargeable to this program.

The increased costs budgeted for program direction and administration in fiscal year 1953, compared with fiscal year 1952, are in line with other projected expansions such as a 24.9-percent increase in over-all operating costs and the initiation of new construction in the amount of approximately $450,000,000. In addition the continued expansion of defense mobilization requirements will increase the workload of control and distribution of essential materials by means of priorities and allocations.

Taken as a percent of total operating costs and excluding construction costs, program direction and administration has decreased from year to year as follows:

	Total operating costs	Cost of program direction and administration	Percent of total
Fiscal year 1951	$400,302,436	$23,800,838	5.9
Fiscal year 1952	614,971,374	31,366,974	5.1
Fiscal year 1953	767,800,000	35,400,000	4.6

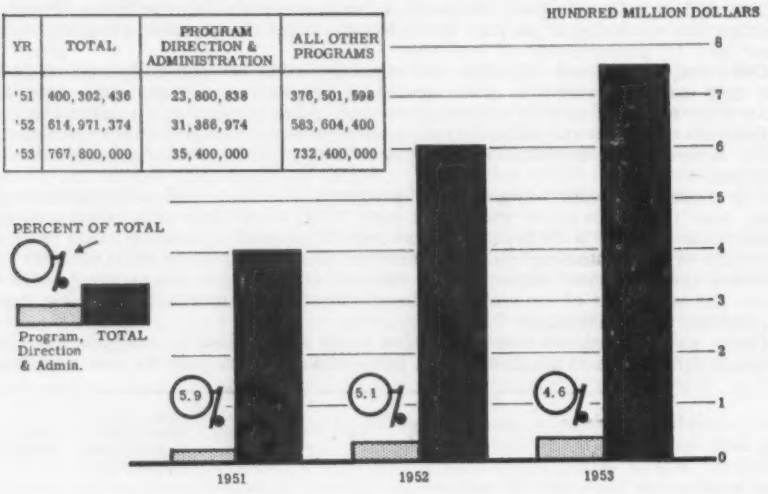
It should be noted from the foregoing table that, while the costs of program direction and administration are increasing, the rate of increase is less than the increase in total operating costs. This is demonstrated further by the following table which shows the percentage increase in total operating costs and program direction and administration costs from year to year.

	Percent increase in costs		
	1952 versus 1951	1953 versus 1952	1953 versus 1951
Total operating costs	53.6	24.9	91.8
Program direction and administration costs	31.8	12.9	48.7

The relationships described above are illustrated in the following charts:

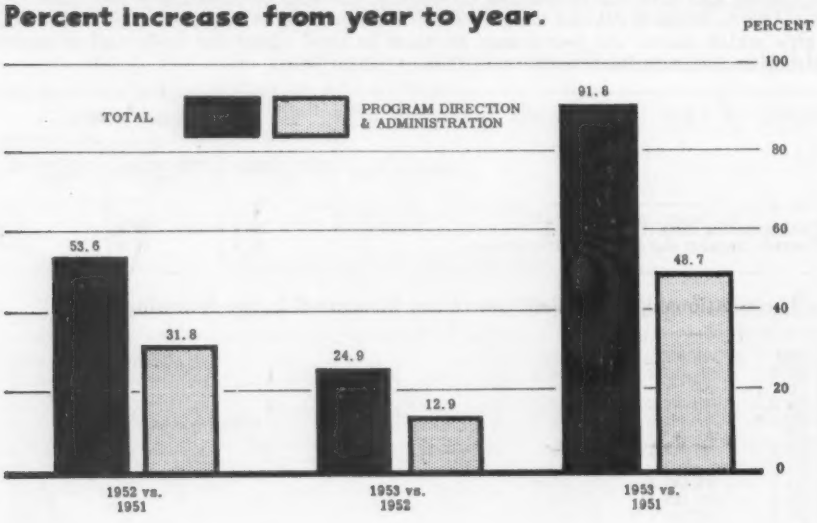
AEC TOTAL OPERATING COSTS (ALL PROGRAMS)

YR	TOTAL	PROGRAM DIRECTION & ADMINISTRATION	ALL OTHER PROGRAMS
'51	400,302,436	23,800,838	376,501,598
'52	614,971,374	31,366,974	583,604,400
'53	767,800,000	35,400,000	732,400,000



AEC TOTAL OPERATING COSTS (ALL PROGRAMS)

Percent increase from year to year.



Detailed justification of operating costs

Object class	1951 actual	1952 estimate	1953 estimate
Total number of permanent positions	4,947	5,203	5,332
Full-time equivalent of all other positions	24.6	30.7	31.7
Average number of all employees	3,764.6	4,436.4	5,055.6
01 Personal services:			
Permanent positions	$17,658,797	$23,464,327	$27,028,310
Part-time and temporary positions	192,037	237,230	240,340
Regular pay in excess of 52-week base		90,247	103,954
Payment above basic rate	322,171	356,852	342,682
Payment to other agencies for reimbursable details	3,000	13,751	7,400
Total personal services	18,176,005	24,162,407	27,722,686
02 Travel	1,284,662	1,834,894	1,965,904
Other:			
03 Transportation of things	159,338	348,900	238,650
04 Communication services	813,721	1,027,617	1,123,350
05 Rents and utilities	297,670	363,495	386,257
06 Printing and reproduction	280,841	411,403	399,920
07 Other contractual services	2,013,628	2,270,225	2,555,546
Services performed by other agencies	26,244	70,711	62,894
08 Supplies and materials	736,667	786,703	827,897
13 Refunds, awards and indemnities	1,111	10,500	10,500
15 Taxes and assessments	10,951	80,119	106,396
Total other	4,340,171	5,369,673	5,711,410
Total operating costs	23,800,838	31,366,974	35,400,000

PROGRAM DIRECTION AND ADMINISTRATION

Mr. WALLER. On pages 521 to 526, inclusive, is contained information in respect to the estimates for program direction and administration. On page 524 is a graph which indicates that the cost for program direction and administration has continued to decline in relation to the over-all operating costs of the Commission's program. The chart indicates that this ratio has decreased from 5.9 percent in 1951 to 4.6 percent in 1953. The committee may remember that in fiscal 1949 the ratio to the total operating costs was 6.9 percent. Thus, since fiscal 1949 the ratio of program direction and administration to direct operating costs will have been reduced by one-third.

REDUCED EXPENSES RATIO

Senator MAYBANK. You reduced expenses one-third?

Mr. WALLER. Reduced the ratio.

Mr. MAYBANK. You reduced the ratio one-third in 3 years?

Mr. WALLER. That is right. That is, the ratio of program direction and administration to total operating costs has been reduced.

I might say here that we do not know for sure what this percentage ratio should be. We do feel that as long as it is coming down certainly it is going in the right direction. Whether it is going fast enough is a matter of judgment.

BUDGET INCREASE

Our estimates for program direction and administrative costs for 1953 show an increase of $4 million. This is about 13 percent over fiscal 1952 as compared to a total operating cost increase of approximately 25 percent. The major portion of the over-all increase is

accounted for by an increase in average employment of approximately 170 people in Washington and about 450 people in the field.

Senator MAYBANK. Increase?

PERSONNEL

Mr. WALLER. That is right. It is an average employment increase of about 170 people in Washington and about 450 people in the field.

Senator ELLENDER. You are talking about administration?

Mr. WALLER. These are the people who are doing the total supervisory and administrative job.

The primary increase in load, both in Washington and the field, is involved with construction, procurement, finance, and security functions.

SUPERVISION

In addition to the personal services increase in program direction and administration—that is, this program that is identified as supervision—there is an increase of $850,000 for personal services of AEC Federal employees in programs other than this one. The significant changes that bring about these increases are found in the raw materials exploration program and in shipment security people, couriers, and guard forces in connection with the increased production and weapons programs.

TOTAL PERSONAL SERVICES

The Commission's total personal services increases from the 1952 estimate of $33,225,000 to $38,635,000, an increase of 16 percent above the 1952 estimate.

Senator MAYBANK. How many more people percentagewise are working now?

Mr. WALLER. The total operating budget is up 25 percent.

Senator MAYBANK. The operating budget for new construction and weapons?

Mr. WALLER. That does not include construction. Construction is over and beyond the operating budget.

OPERATING BUDGET

Senator MAYBANK. What is the operating budget?

Mr. WALLER. $767 million. That is the total program.

Senator MAYBANK. For everything?

Mr. WALLER. That is right; raw materials, fissionable materials, research, reactor development, and so on.

Senator MAYBANK. That is occasioned by the enlargement of the plant?

Mr. WALLER. The operating program you have been hearing about so far increases about 25 percent.

The supervision of the program has gone up also but not in direct ratio. Our supervisory group has increased but at a rate about 50 percent as fast as the direct operating cost.

Senator MAYBANK. When you get to 1956 what do you think it will be?

Mr. WALLER. I have not gotten into the details of any expansion estimate yet. I think it would be premature for me to guess at that. We will have an increase in operating staff.

Senator MAYBANK. But not in proportion?

Mr. WALLER. No.

Senator SALTONSTALL. Of course, you cannot give us the value of the products you turn out. Here you have $767,800,000 worth of operating costs of which $35,400,000 is administration. I assume you cannot give us any value of the product, so we have no basis to figure out the ratio.

Mr. WALLER. It is difficult to figure that out. I think you can get some measure of what we are doing and whether you think it is a good diversion of our people by looking at this functional breakdown. I have prepared a chart which is not in the budget, which shows how we are spending our personnel dollars, where our people work, what kind of work they do. It might be helpful if I ran down this list.

Senator MAYBANK. Without objection, we would like to have it in the record. The entire breakdown will be placed in the record.

(The breakdown referred to is as follows:)

Functional [1] distribution of full-time positions, fiscal year 1951–53

	1951 actual		1952 estimated		1953 estimated	
	Number	Percent	Number	Percent	Number	Percent
Total all programs	6,851	100.0	7,306	100.0	7,505	100.0
Security	1,648	24.1	1,733	23.7	1,798	23.9
Administrative services	1,130	16.5	1,130	15.5	1,191	15.9
Finance	727	10.6	756	10.3	770	10.3
Construction and engineering	455	6.6	575	7.9	543	7.2
Production	484	7.1	501	6.9	522	6.9
Raw materials	251	3.7	327	4.5	352	4.7
Information (publicity and technical) [2]	379 (67)	5.5 (1.0)	348 (64)	4.8 (0.9)	344 (63)	4.6 (0.9)
Community affairs	300	4.4	315	4.3	314	4.2
Top management	227	3.3	246	3.4	263	3.6
Organization and personnel	240	3.5	248	3.4	254	3.4
Contractor services	173	2.5	204	2.8	203	2.7
Reactor	147	2.1	171	2.3	186	2.5
Biology and medicine	134	2.0	167	2.3	167	2.2
Legal (excluding patents) [3]	157 (70)	2.3	155 (77)	2.1	160 (81)	2.1
Budget	82	1.2	96	1.3	103	1.4
Research	101	1.5	100	1.4	98	1.3
Contract coordination	48	.7	60	.8	65	.9
Military application	52	.8	52	.7	52	.7
Patents	51	.7	53	.7	50	.7
Safety	51	.7	56	.8	54	.7
Export control	14	.2	11	.1	11	.1

[1] Functional definitions:

Administrative services: Furnishes office services including the areas of transportation, communications, records, and the procurement, storage, utilization, and disposal of materials (other than S&F and weapons component equipment, supplies, and real estate.

Biology and medicine: Develops measures to guard the health of personnel engaged in research and production activities. Sponsors research on biological affects of radiation.

Budget: Coordinates budget preparation, controls allotments and apportionments to insure conformity with fund availability and with programs and policies.

Community affairs: Supervises and/or operates community facilities, including those functions common to normal municipalities (including police and fire departments at Los Alamos).

Construction and construction engineering: Supervises all construction and related engineering. Reviews all construction projects. Administers the priorities and allocations program.

Contractor services (Idaho only): Common services provided largely for the contractors including (1) warehousing, (2) building, facility, and utility maintenance, (3) fire department.

Contract coordination: Schedules, coordinates, and expedites the negotiation of contracts and their modification.

[2] Figures in parentheses equals public information staff.

[3] Figures in parentheses equals professionals.

Export control: Develops and administers all phases of the program for control of exports of equipment and materials (other than source) important to the production of fissionable material. Administers the licensing of source materials in accordance with statutory requirements.

Finance: Provides audit reviews, investigations and inspections of the business management aspects of the agency's programs. Prepares and reviews financial statements. Performs accounting and auditing functions pertaining to financial transactions. Assists contractors in negotiating insurance contracts.

Information: Disseminates scientific, technical, and general information relating to the atomic energy programs. Provides publishing, reference, and document collection and distribution services for technical materials. Figures in parentheses are public information positions.

Legal: Reviews legal problems affecting all Commission activities. Performs legal services in connection with contracts and other legal documents.

Military application: Washington division only.

Organization and personnel: Advises on labor relations matters affecting AEC contracts; administers the AEC Federal personnel program; provides personnel operations services to each office. Advises on management, organization, and methods matters.

Patents: Insures that the Government's interests are adequately protected in connection with patent matters.

Production: Supervises production in raw materials, feed materials, and fissionable materials. Reviews plant processes, maintains control over all source and fissionable materials.

Raw materials: Includes Raw Materials Division (Washington), Exploration and Foreign Procurement, and the mining and metallurgical engineering groups at Colorado.

Reactor: Supervises the design and development of new and improved reactors both for civilian and military purposes.

Research: Supervises programs of research in the physical sciences, etc., but not covered by biology and medicine.

Safety: Includes industrial safety and fire protection but excludes fire departments and public safety.

Security: Assures the safekeeping of restricted data and other classified matter and the protection of installations and materials of the Commission and its contractors.

Top management: Included in Washington are the Commissioners, the Office of the General Manager, and his immediate offices; included in the field are operations offices and area managers.

NOTE.—Washington organizations perform policy-making functions in addition to the functions outlined above.

TOTAL EMPLOYEES AND PERCENTAGE BREAKDOWN

Mr. WALLER. Of this total staff we are asking for in 1953, which is a total of 7,505 positions, with an average employment of 7,140 through the year, 24 percent of those people will be working directly on security functions. These are functions having to do with clearance of personnel, the guarding of material in shipment, the processing of people for clearance, the guards for patrolling, and so on. In other words, 24 percent of the total of 7,505 will be in the security function.

There is a group of 16 percent involved in the so-called administrative services. These are telephone and switchboard operators, functions that we perform for ourselves, office service, working on transportation, records, procurement, storage, utilization, disposal of materials, and so forth.

There is 10.3 percent of the people involved in the finance functions, that is, in internal auditing, bookkeeping, accounting, and so forth, handling the records of accounts of the Commission.

In construction and engineering we have 7.2 percent of our total staff.

Senator ELLENDER. Will those continue to work when you complete the projects?

Mr. WALLER. This is in fiscal 1953. That picture is changing, of course. As the construction work goes down this number will drop.

Senator ELLENDER. When your work is completed——

Mr. WALLER. Their functions would be wiped out.

These people, Senator, are not all engineers; these are all the people involved with that particular function.

Senator ELLENDER. Supervisors?

Mr. WALLER. That is right, and clerical people.

I believe I gave you the figures in production, 6.9 percent.

In raw materials, 4.7 percent. I might say here that that figure is increasing slightly as we increase our exploration efforts on the Colorado plateau and elsewhere.

Our total staff in information is 4.6 percent. I want to break that down. Information in AEC is two major programs. One is a direct program of classified and unclassified technical information, dissemination of technical information both within the AEC and, as to unclassified information, outside the AEC, in line with the provisions of the Atomic Energy Act. Those people are a very sizable number of our information people. Of this total group of 4.6 percent in 1953, less than 1 percent will be on public information functions as such. The remainder are on technical information jobs.

In community operations, handling community affairs, we have 4.2 percent of the staff devoting their full time to the problems of operating the towns.

Our top management group—and in this group we have included the Commissioners, General Manager's Office, and the Field Manager's top staffs we, have 3.6 percent of our total AEC people.

In organization and personnel it is 3.4 percent for the people handling the wage and salary problems of all the contractors as well as the AEC staff. This organization and personnel job includes the supervision necessary for the contractor labor relations functions, plus organization and management services.

CONTRACTOR SERVICES

On contractor services the number is 2.7 percent. These are common services for contractors, primarily in Idaho, where we are operating a central maintenance service, including offices and building maintenance, utility maintenance, central fire department, and so on.

Senator ELLENDER. Will that continue?

Mr. WALLER. Yes, the reactors built out there will require servicing and operations. They will continue to service them from central facilities. This may fluctuate after 1953, but the estimates look as though we will have 2.7 percent of our staff on that work.

REACTOR PROGRAM

On the reactor program, directly on the reactor development effort, we have 2.5 percent of our staff. Those are the people working on the design, on new ideas, supervising the programs on the submarine reactor, the aircraft reactor, and several others.

In the biology and medicine field the staff is 2.2 percent.

LEGAL STAFF

The legal staff, excluding patents, is 2.1 percent. I want to break that figure down.

We have 81 lawyers forecast in 1953 with a staff of supporting files, secretarial, and clerical help of 81 people.

Senator ELLENDER. Why do you need so many lawyers?

Mr. WALLER. I think the legal problems involved in the Commission's work are extraordinary. If you want to get into details, perhaps our General Counsel should speak to them.

Senator MAYBANK. Is the General Counsel scheduled to speak?

Mr. HOLLIS. May I comment on that? First of all, the lawyers listed there are in 14 different areas, 14 different places around the country.

Senator MAYBANK. How many are there, 81?

Mr. HOLLIS. 81 for 1953. The large volume of our work stems from a very large number of contracts that the Commission has. I think the last account from June 1950, to November 1951, showed that there were 17,000 prime contract actions and purchase orders. I do not say that the lawyers spent a lot of time on all of them, but it gives you some measure of the contract work that the Commission has.

LEGAL PROBLEM

Also rising from this contract relationship of the Commission are a vast number of other legal problems. For example, one timely one, one current one, is the problem of taxes to be paid by our contractors. Do our contractors have to pay sales and use taxes in the sense that they are instrumentalities of the Federal Government? As a matter of fact, the lawyers at Oak Ridge and our lawyers here spent a great deal of time on a case like that. Only in the last few weeks did the Supreme Court decide that certain AEC contractors did not have to pay the sales and use taxes under the Atomic Energy Act because it is just as if the Atomic Energy Commission itself were purchasing the commodities.

The communities of Oak Ridge, Hanford, and Los Alamos have been mentioned here where the community is owned entirely, lock, stock, and barrel, by the Government. It really means that our lawyers are in a sense corporation counsel in those towns. There are a large number of problems in connection with the concession agreements in those towns, in connection with the leases of the houses. In Oak Ridge alone I believe there are 8,500 houses.

In the patents field there are a large number of problems that arise by virtue of the difficult equities that have to be drawn between what patent rights the contractor is entitled to and what patent rights the Government is entitled to by virtue of paying the expenses of research and development.

Furthermore, in the provisions of the Atomic Energy Act, as you may know, there is a carved-out area where the patent laws are not applicable and in the Atomic Energy Act there is a special provision for a person who would otherwise be entitled to get a patent, to make application before a patent compensation board set up in the Commission for compensation for his invention in lieu of the normal patent system. These patent problems require the attention of lawyers in the General Counsel's office and in addition particular special patent lawyers.

Furthermore the security functions of the Commission require a great deal of legal work. We have for example problems of deputizing sheriffs, problems of bearing arms. In this connection we have problems of legislation. We have for example a request before the Joint Committee on Atomic Energy at the present time for express authority for the Commission's guards and certain of its employees to bear arms.

INTERNAL SECURITY

We have had problems relating to the jurisdiction over the AEC communities. To take one example, in Los Alamos we found out that part of Los Alamos was under the jurisdiction of the United States and part of Los Alamos was under the jurisdiction of New Mexico. As a matter of fact there were some houses in Los Alamos where this line ran right down through the middle; so that legally part of the house was, as in the District of Columbia, in the State of New Mexico. One case went to the New Mexico Supreme Court where it was held they could not get a divorce in a situation like that because there was no Federal divorce law on the one hand and, on the other hand, they were not legally living in the State of New Mexico. You will remember that we had to come up to Congress and get legislation to take care of it.

This merely illustrates that there are many, many functions in this atomic energy business, not only in Washington but the whole field organization, which seem to turn up a number of legal problems that really require what I believe to be the very modest number of lawyers we are requesting, Senator.

Senator ELLENDER. I presume when this program is completed, that is, these installations, you will be able to separate a lot of these lawyers from the present jobs?

Mr. WALLER. That remains to be seen. Certainly every effort will be made to reduce any unnecessary staff.

REGULAR AND CONTRACT EMPLOYEES

Mr. BOYER. May I inject something here? I think in order to keep the perspective here reasonable, it will be well to point out that where we today have 5,850 employees on the Atomic Energy Commission rolls, there are approximately 125,000 employees working under contract, carrying out the Atomic Energy Commission's program.

ORGANIZATIONAL BREAKDOWN

In line with what Senator Saltonstall queried us on, we operate by having seven principal operating divisions, that is, Raw Materials, Supply, Production, Division of Military Application, Research, Reactor Development, and Biology and Medicine. Then we have staff divisions like the Controller's Division, legal, organization and personnel, information services, to aid all of those principal operating groups. We then have field offices under field managers, who are responsible for carrying out or administering the program that falls in either their functional or geographical area. Those people in turn have security, legal, and accounting people attached to their offices to see that the contracts are properly administered.

GAO AUDITS

In addition to that, of course, we have the GAO audit group looking over our shoulders continuously. We have introduced in the Atomic Energy Commission the industrial type of accounting. You may have noticed that in some of the GAO reports on this program they have cited the efforts of the Atomic Energy Commission as being in the forefront of this type of accounting.

We have control over the contracts that are made by our principal contractors. They must be referred to the Atomic Energy Commission managers in the area to see that they are reasonable, that their fees are in line, and that they are a sound business contract.

So I think the question might be raised, do we really have enough people to do the job rather than do we have too many.

CHAUFFEURS

Senator MAYBANK. How many chauffeurs do you have?

Mr. BOYER. We have no chauffeurs.

Senator THYE. How many automobiles do you have?

Mr. WALLER. If I may first complete the functional breakdown, there are the functions of budget, research——

Senator ELLENDER. You had finance.

ACCOUNTING AND AUDITING

Mr. WALLER. Finance is the accounting and auditing program. Budgeting is separate. Finance looks to the past and the present and budget looks to the future.

In the field of budget, research, contract coordination, military application, patents, safety, and export control we have the remaining numbers which add up to about 7 percent.

Senator SALTONSTALL. Are any additional funds provided by other departments? For instance, who pays the colonel?

Mr. WALLER. The Army pays Colonel Field his regular amount and we pay him, under the language of the law setting up the Director of Military application as a statutory position, the difference up to $14,000 a year.

Senator SALTONSTALL. So that 7,500 positions is a fair representation of your total, and the armed services and other departments like the Bureau of Standards or any of the research groups of the Armed Forces are not thrown in to give you more money than does appear?

Mr. WALLER. No, sir. There are some cross charges on other than the personnel side. The dollars represented in this request are the total dollars for the AEC staff. We do have work done through a reimbursable arrangement with agencies like the Coast and Geodetic Survey or the United States Geological Survey which are paid from the operating funds, from the raw materials fund in those specific cases. We in effect have a contract with them and we pay them for services rendered us. We do not budget in our personal services or travel amounts for people they may use on those projects.

SECURITY GUARDS

In Washington, as another example, we pay the Public Buildings Administration for our guards. We do not employ our own guards around the Washington buildings, but we reimburse the Public Buildings Administration for their guards.

Senator SALTONSTALL. So that your 7,500 employees are truly representative of the administrative side of the Government without any of the other departments furnishing you gratis people on their payroll?

Mr. WALLER. That is correct.

TOTAL OPERATING EMPLOYEES

Senator SALTONSTALL. How many employees have you altogether operating, if you can give us that figure?

Mr. WALLER. In total for contractor as well as AEC?

Senator SALTONSTALL. Yes.

Mr. WALLER. At the present time it is about 50,000 on operations. We have another 60,000 plus, it is almost 70,000 now, on construction.

Senator MAYBANK. That is 120,000.

Mr. WALLER. Yes, sir. At the end of December we had 123,000 total. That is AEC staff plus the operation and construction staff of our contractors.

Senator MAYBANK. What will you have by the end of fiscal year 1953?

Mr. WALLER. About 135,000.

Senator SALTONSTALL. Of which 7,500 will be administrative?

Mr. WALLER. That is right, of which 7,500 will be AEC Federal employees.

Mr. MCCARTHY. I think we ought to point out, in answer to Senator Saltonstall's question, that in the 7,500 here there are included about 67 military people holding positions in AEC. I think that other than

Colonel Fields, who holds a statutory position under the Atomic Energy Act, the others are paid by the Armed Services, but we lapse their salaries out of our request.

Senator MAYBANK. Are there any further questions, Senator?

AUTOMOBILES

Mr. BOYER. We have not answered Senator Thye's question on the automobiles.

Mr. TAYLOR. At the end of fiscal year 1953 we expect to have 2,223 old passenger-carrying vehicles in service. In this proposal we are asking for 450 passenger-carrying vehicles, 327 of which are for replacement, and 123 for additions to the fleet.

Senator MAYBANK. Where are those automobiles?

Mr. TAYLOR. They are at all the various field installations of AEC.

Senator MAYBANK. What do you have in Washington?

Mr. TAYLOR. We have 13 cars in Washington.

Senator THYE. The others are used by whom? Are they assigned to individuals or are they in the pool and various ones go out and drive the cars themselves?

Mr. TAYLOR. They are in pools, sir, and they are driven by members of the Atomic Energy Commission staff and contractors, people who need transportation.

Senator THYE. Does that furnish transportation to their living quarters in the evening after their day's work is done?

Mr. TAYLOR. No, sir.

Senator THYE. How many of these are trucks?

Mr. TAYLOR. None of these are trucks. These are 13 passenger-carrying vehicles.

Senator THYE. In the District?

Mr. TAYLOR. Yes.

Senator THYE. Outside the District how many trucks are there?

Mr. TAYLOR. The major use of trucks is in connection with construction, and I do not have the details of the various classes of trucks in use. The figure that I gave you, the 2,223 old and 123 new vehicles at the end of fiscal year 1953, is passenger-carrying vehicles.

Senator THYE. Outside the District are those cars available to the employees to go home to their respective apartments or living quarters at night and to be used to return to work the next morning?

Mr. TAYLOR. The automobiles of the Atomic Energy Commission are used in the official business of the Commission only, sir, and they are not used to transport employees to and from their places of residence.

Senator THYE. And on holidays and week ends those cars are in a pool and are not out?

Mr. TAYLOR That is right, sir.

REAL ESTATE MANAGEMENT

Senator MAYBANK. Now, to get this record a little clearer, do you know how many acres of land you own and operate? In Savannah you have 250,000 acres. What do you have in these other places, just to give us a picture of the extent of operations?

Mr. GLENNAN. It is 2,800 square miles. Multiply that by 640 and you get 1,792,000 acres.

Senator MAYBANK. 2,800 square miles, and for those 2,800 square miles you will have 2,346 passenger-carrying vehicles in the pools in various places?

Mr. GLENNAN. That is half again the size of the State of Delaware.

Senator ELLENDER. Do these 2,800 square miles include the desert of New Mexico?

Mr. GLENNAN. Yes, sir. The total land area occupied by Commission installations is 2,800 square miles.

Senator ELLENDER. That includes the proving grounds?

Mr. GLENNAN. Yes, sir.

Senator ELLENDER. To what extent do you use cars at these proving grounds?

Mr. TYLER. We use them very extensively.

AUTOMOBILE REPAIRS

Senator ELLENDER. How do you keep tab on the repairs of those cars when you have every Tom, Dick, and Harry driving them?

Mr. TYLER. We have around 1,200 cars. This is the Santa Fe operations which includes Nevada and Los Alamos. All our cars are returned to the pool nightly. We have our own motor pool and maintenance operations there. They go out with a daily trip ticket.

Senator ELLENDER. You have someone to supervise and see that they are properly gassed and oiled and greased?

Mr. TYLER. That is one of the advantages of the pool system, they have to come back in. They are turned in to the pool at the end of each day.

Senator SALTONSTALL. You have 2,800 square miles with 123,000 employees, running up to 135,000 employees, and with an operating budget of $767,800,000 by the end of 1953. It would be interesting to have the number of sites with the total capital outlay, situated on that 2,800 square miles; and if you want to go one step further, what is the value of those 2,800 square miles? That is something that could go on the record. If we can get that on the record, we can help you.

Mr. BOYER. We can get you a statement.

(The information referred to is as follows:)

Analysis of plant values

[In millions of dollars]

	Completed at June 30, 1951	Balance required to complete authorized projects and projects in 1953 estimates	Total upon completion
Land (59 sites) [1]	13.9	19.8	33.7
Community facilities	286.8	64.4	351.2
Production, research, and general facilities	1,624.1	3,089.9	4,714.0
Total	1,924.8	3,174.1	5,098.9

[1] Excludes storage sites.

Senator MAYBANK. Mr. Lovett made a statement the other day about the Pentagon and the public debt. We spent $65,000,000 on the Pentagon and charged it off in 1 year. If we had amortized it over 50 years, a great portion of this debt would not exist. As Senator Saltonstall said, you have buildings and land as assets to the Government.

Mr. BOYER. We have prepared statements that can go in the record for these other programs if you want to include them.

Senator MAYBANK. I believe the committee would like to hear from the other gentlemen tomorrow morning. Certainly I would like to hear Dr. Warren. I have been very much interested in the biology and medicine part of it. I think we ought to have here tomorrow morning all those who have not been heard.

Mr. BOYER. The other gentlemen you would not care to call back?

Senator MAYBANK. The others have been heard. We will try to finish this in the morning.

The committee will now recess until 10:15 tomorrow morning and we will meet in the main room.

(Thereupon the committee recessed at 4:30 p. m., Monday, February 18, 1952, until 10:15 a. m., Tuesday, February 19, 1952.)